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U.S. GOVERNMENT DEPARTMENT OF AGRICULTURE

PEACE ON EARTH
GOODWILL TOWARD MEN

GLEANINGS IN BEE CULTURE

DEVOTED
TO
SCHOOL
& HOME INTERESTS.

MEDINA, OHIO
BY
A. J. ROOT

TERMS, ONE DOLLAR PER YEAR.

FRAZER & DUNLEAVY, X3

ENTERED AT THE POST OFFICE, MEDINA, OHIO, AS SECOND-CLASS MATTER,

ADVERTISEMENTS.

We require that every advertiser satisfy us of responsibility and intention to do all that he agrees, and that his goods are really worth the price asked for them.

Rates for Advertisements.

All advertisements will be inserted at the rate of 20 cents per line, Nonpareil space, each insertion; 12 lines of Nonpareil space make 1 inch. Discounts will be made as follows:

On 10 lines and upward, 3 insertions, 5 per cent; 6 insertions, 10 per cent; 9 insertions, 15 per cent;

12 insertions, 20 per cent; 24 insertions, 25 per cent.

On 50 lines ($\frac{1}{2}$ column) and upward, 1 insertion, 5 per cent; 3 insertions, 10 per cent; 6 insertions, 15 per cent; 9 insertions, 20 per cent; 12 insertions, 25 per cent; 24 insertions, 33 $\frac{1}{3}$ per cent.

On 100 lines (whole column) and upward, 1 insertion, 10 per cent; 3 insertions, 15 per cent; 6 insertions, 20 per cent; 9 insertions, 25 per cent; 12 insertions, 33 $\frac{1}{3}$ per cent; 24 insertions, 40 per cent.

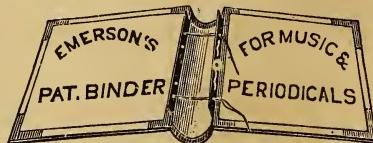
On 200 lines (whole page), 1 insertion, 15 per cent; 3 insertions, 20 per cent; 6 insertions, 25 per cent; 9 insertions, 30 per cent; 12 insertions, 40 per cent; 24 insertions, 50 per cent.

An additional discount of 10 per cent, where *electro-types are furnished.*

A. I. ROOT.

CLUBBING LIST.

WE WILL SEND GLEANINGS—				
With the American Bee-Journal, W'y	(\$1.00)	\$1.75		
With the Bee-keepers' Magazine,	(1.00)	1.75		
With the Bee-keepers' Guide,	(.50)	1.40		
With the Canadian Bee Journal, W'y	(1.00)	1.80		
With all of the above journals,		4.25		
With American Agriculturist,	(\$1.50)	2.25		
With American Garden,	(\$1.00)	2.25		
With the British Bee-Journal,	(2.62)	3.50		
With Prairie Farmer,	(2.00)	2.75		
With Rural New Yorker,	(2.00)	2.90		
With Scientific American,	(5.20)	3.50		
With Ohio Farmer,	(1.00)	1.90		
With Fruit Recorder and Cottage Gard'r, (.50)	.50	1.40		
With U. S. Official Postal Guide,	(1.50)	2.25		
With Sunday-School Times, weekly.	(2.00)	2.25		
[Above Rates include all Postage in U. S. and Canada.]				



You can not look over the back No's of GLEANINGS or any other Periodical with satisfaction, unless they are in some kind of a Binder. Who has not said—"Dear me, what a bother—I must have last month's Journal and it is nowhere to be found"? Put each No. in the Emerson Binder as soon as it comes, and you can sit down happy, any time you wish to find anything you may have previously seen, even though it were months ago.

Binders for GLEANINGS (will hold them for one year), gilt lettered, for 60 cts.; by mail, 12 cts. extra Ten, \$5.00; 100, \$45.00. Table of prices of Binders for any Periodical, mailed on application. Send in your orders.

A. I. ROOT, Medina, Ohio.

The Canadian P. O. authorities refuse to receive these through the mails, as they exceed the proper weight for merchandise.

FLAT - BOTTOM COMB FOUNDATION.

High side-walls, 4 to 14 square feet to the pound. Circular and samples free.

J. VAN DEUSEN & SONS.

4tfd Sole Manufacturers,

SPROUT BROOK, MONT. CO., N. Y.

VANDERVORT
COMB FOUNDATION MILLS.

Send for samples and reduced price list.
2tfd JNO. VANDERVORT, Laceyville, Pa.

Cash for Beeswax!

Will pay 20c per lb. cash, or 25c in trade for any quantity of good, fair, average beeswax, delivered at our R. R. station. The same will be sold to those who wish to purchase, at 25c per lb., or 30c for best selected wax.

Unless you put your name on the box, and notify us by mail of amount sent, I can not hold myself responsible for mistakes. It will not pay as a general thing to send wax by express.

A. I. ROOT, Medina, Ohio.

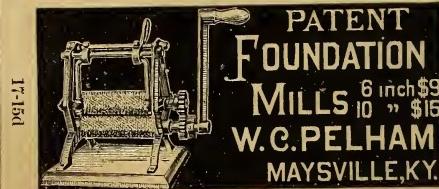
Barnes' Foot-Power Machinery.

Read what J. J. PARENT, of CHARLTON, N. Y., says—"We cut with one of your Combined Machines last winter 50 chaff hives with 7 inch cap, 100 honey racks, 500 broad frames, 2,000 honey-boxes and a great deal of other work. This winter we have double the amount of bee hives, etc., to make and we expect to do it all with this Saw; it will do all you say it will."

Catalogue and Price List Free. Address W. F. & JOHN BARNES, 68 Ruby St., Rockford, Ill.

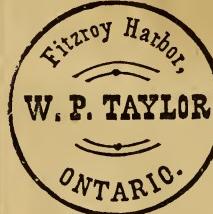
When more convenient, orders for Barnes' Foot-Power Machinery may be sent to me. A. I. Root.

23fd



RUBBER STAMPS

DATING, ADDRESSING, BUSINESS,
LETTER HEADS, ETC.



Fitzroy Harbor,
W. P. TAYLOR
ONTARIO.



No. 3.



J. H. TOWNLEY
Dealer in
BEES, HONEY.
COMB FOUNDATION
AND
Apriarian Supplies
BEESWAX
Wanted

No. 2.

Address only, like No. 1, \$1.50; with business card, like No. 2, \$2.00; with movable months and figures for dating, like No. 3, \$3.00. Full outfit included—pads, ink, box, etc. Sent by mail postpaid. Without ink and pads, 50 cts. less.

Put your stamp on every card, letter, paper, book, or anything else that you may send out by mail or express and you will save yourself and all who do business with you a "world of trouble." I know, you see.

We have those suitable for druggists, grocery-men, hardware dealers, dentists, etc. Send for circular.

A. I. ROOT, Medina, Ohio.

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HEADQUARTERS IN THE SOUTH FOR THE MANUFACTURE AND SALE OF BEE - KEEPER'S SUPPLIES.

The only Steam Factory Erected in the South, Exclusively for the Manufacture of Hives, Frames, Sections, etc. The Viallon and Root Simplicity Hives a Specialty.

ITALIAN QUEENS,

Untested, in April, \$1.25 each; \$13.00 per doz. From May 5 to June 1, \$1.10 each, \$12.00 per doz. After June 1, \$1.00 each, \$10.00 per doz. Tested, \$2.50 each; select tested, \$3.00 each to first of June. Contracts taken with dealers for the delivery of a certain number of queens per week, at special figures.

FOUR-FRAME NUCLEUS,

With pure Italian queen, containing 3 pounds of bees when received; in April, \$4.00; after May 25, 25 cts. less. Safe arrival and satisfaction guaranteed.

BEE BY THE POUND,

Delivered, express prepaid, in lots of 5 pounds or more. Send for price. Same discount given as offered by A. I. Root, in GLEANINGS from month to month. For more particulars, send for catalogue for 1886.

P. L. VIALLON.

5-3d Bayou Goula, Iberville Parish, La.



BINGHAM SMOKERS LAST AND PLEASE.

CLERMONT, VA., Feb. 9, 1886.

Messrs. Bingham & Hetherington:
Dear Sirs:—Please find inclosed \$2 00, for which send, per return mail, a Bingham "Doctor" smoker. Respectfully yours,
S. H. HUTCHINSON.

INDEPENDENCE, CAL., Jan. 2, 1886.

Messrs. Bingham & Hetherington:—Dear Sirs:—The "Doctor" came to hand last night in good order. It is a Daisy. Won't the little pets wink their eyes when they get some of his medicine? I have one of your "Large" smokers, which has been in use six years.

Respectfully yours, WM. MUTH-RASMUSSEN.

Bingham Smokers and Knives sent per mail, postpaid, at 65 cts. to \$2.00. Send for free circular to 5-3d BINGHAM & HETHERINGTON, ABRONIA, MICH.

HONEY AND BEESWAX.

Our market, and location as a trade center, the rapid growth of our city and country, gives us a large demand for honey. We have found it impossible to keep a stock of 1-lb. frames, unglashed, and of which we are in need. This style of comb sells much faster than any other and we will make liberal offers on receipt of samples. We are well stocked on 2-lb. sections, also extracted. Beeswax wanted on commission.

CLEMONS, CLOON & CO.,

KANSAS CITY, MO.

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per annum, when given once a month, or \$4.00 per year if given in every issue.

\$1.00 Queens.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with *, use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner, or later, see rates in price list.

*A. I. Root, Medina, Ohio.	
*H. H. Brown, Light Street, Columbia Co., Pa.	1tfd
*Paul L. Viallon, Bayou Goula, La.	
*S. F. Newman, Norwalk, Huron Co., O.	1tfd
*Wm. Ballantine, Mansfield, Rich. Co., O.	1tfd
*D. G. Edmiston, Adrian, Len. Co., Mich.	23tfd
*S. G. Wood, Birmingham, Jeff. Co., Ala.	1tfd
*S. C. Perry, Portland, Ionia Co., Mich.	23tfd
*E. Kretschmer, Coburg, Mont. Co., Iowa.	23tfd
D. McKenzie, Camp Parapet, Jeff. Parish, La.	1tfd
Ira D. Alderman, Taylor's Bridge, Samp. Co., N. C.	1tfd
G. F. Smith, Bald Mount, Lack'a Co., Pa.	23tfd
*Jos. Byrne, Baton Rouge, Lock Box 5.	
J. W. Winder, Carrollton, Jeff. Par.	
East Baton Rouge Par., La.	23tfd
New Orleans, La.	3tfd
*E. Burke, Vincennes, Knox Co., Ind.	3-1
Richard H. Bailey, Ausable Forks, Essex Co., N. Y.	5-15

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.	
P. L. Viallon, Bayou Goula, Iberville Par., La.	1tfd
C. W. Costellow, Waterboro, York Co., Me.	1-23
Kennedy & Leahy, Higginsville, Laf. Co., Mo.	23tfd
E. Kretschmer, Coburg, Montgomery Co., Ia.	23tfd
S. D. Buell, Union City, Branch Co., Mich.	5-7-9

DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column.

Here * We * Are * Again FOR 1886. *

Bound to sell cheaper than the cheapest, Bees, Comb Foundation, Hives, Sections, and Aparian Supplies in general. Don't fail to send for our Circular, right off.

G. W. ALBRECHT,
DUNDAS, WISCONSIN.

—BE SURE—

To send a postal card for my catalogue of **Albino and Italian Queen-Bees**, and see what my customers say about them, before purchasing elsewhere. Address D. A. PIKE,
5-7-9

SMITHSBURG, WASH. CO., MD.

CONTRACTS WANTED WITH SUPPLY DEALERS

FOR NEXT SEASON'S STOCK OF GOODS.

CHAFF, STORY AND HALF CHAFF, AND SIMPLICITY HIVES, SMOKERS, EXTRACTORS, COMB FOUNDATION, FRAMES, SEC-TIONS, BOOKS, ETC.

At wholesale and retail. Unexcelled facilities. Circulars and estimates free. Successors to S. C. & J. P. Watts. Sta. Kerrmore, B. C. C., & S. W. R. R.

WATTS BROS., Murray, Clearfield Co., Pa.
Itfdb.

MUTH'S
HONEY-EXTRACTOR,
SQUARE GLASS HONEY-JARS,
TIN BUCKETS, BEE-HIVES,
HONEY-SECTIONS, &c., &c.
PERFECTION COLD-BLAST SMOKERS.

Apply to CHAS. F. MUTH & SON,
CINCINNATI, O.

P. S.—Send 10-cent stamp for "Practical Hints to Bee-Keepers."

LOOK HERE

To introduce my strain of pure bright Italians, equal to any in the United States, I will offer tested queens, \$1.00 each; extra fine, selected, \$1.50 each; one-frame nucleus, consisting of one extra select queen, one frame of brood, $\frac{1}{2}$ lb. bees, for \$2.00. If you want any bees, send me your address on postal and I will send you sample by return mail. Beeswax or honey taken in exchange.

THOMAS HORN,
Box 691, Sherburne, Chen. Co., N. Y.

Wanted. Situation as apiarist, for wages, or bees on shares, in one of the following States: Louisiana, Arkansas, Tennessee, Kentucky, or California. Fourteen years' experience; can do all manner of hive work or foundation, etc. Address 3-5db S. SMITH, New Smyrna, Volusia Co., Fla.

Mirror, or Parti-scale Carp For Sale.

Spawners, 10 to 12 inches in length, per doz., \$6.00
" 8 to 10 " " " 5.00

Small fish, 2 to 4 " " " 100. 5.00
W. H. CARPENTER,
3-6db Springboro, Warren Co., Ohio.

NICE FOUNDATION, 35 CTS. PER LB.
W. T. LYONS, Decherd, Franklin Co., Tenn. 345d

Eggs, \$1.25 PER LB, from pure-bred, single-comb Brown Leghorns. Unexcelled layers. Address H. B. GEER, Nashville, Tenn., or E. W. GEER, St. Mary's, Mo. 3-8db

LEGS AND ARMS (ARTIFICIAL)

WITH RUBBER HANDS AND FEET.

The Most Natural, Comfortable and Durable.

THOUSANDS IN USE.

New Patents and Import-

tant Improvements.

Special attention given to

SOLDIERS,

In. Pamphlet of 100 Pages

SENT FREE.

A. A. MARKS,

701 Broadway, New York.

Please mention this paper.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

18-5b



Bee-Keepers' Supplies.

NORTH-WESTERN CHAFF HIVES, 4-PIECE SECTIONS DOVETAILED, FRAMES, HONEY-BOXES, ETC.

Address R. SCHMIDT,
2-6db Caroline, Shawano Co., Wis.

FOR SALE. Five pair fine Pekin ducks, at \$1.00 per pair.
Itfdb D. D. FARNSWORTH, Clive, Polk Co., Iowa.

NOTICE.—For \$3.00 I will mail direct the great scientific work by Frank Chesire, entitled, "Bees, and Bee-Keeping," now publishing in parts.

ARTHUR TODD, Germantown, Philadelphia, Pa. Dadant Fdn. depot, Bees, Hives, and Supplies. 45d

50 COLONIES BEES FOR SALE.

I have 50 stands of bees for sale, hybrids and blacks, and in the Mitchell hive, 15 frames in hive, well painted, and metal rabbits. I live on the Arkansas Midland R. R. and can ship by R. R. or water via Helena. I will take \$4.50 per stand, delivered on board train, and delivered by latter part of March.

PETER METZ,
3-8db Poplar Grove, Phillips Co., Ark.

WE WILL SELL

Chaff hives complete, with lower frames, for \$2.50; in flat, \$1.50. A liberal discount by the quantity. Simplicity hives, Section Boxes, Comb Fdn., and other Supplies, at a great reduction. We have new machinery, and an enlarged shop. **ITALIAN BEES AND QUEENS.** Send for Price List.

A. F. STAUFFER & CO., Sterling, Ills.

WANTED.

Names of parties wanting first-class dovetailed honey sections, to whom samples will be sent on receipt of address. Also crates in season. A perfect iron section-box former sent for \$1.00, and satisfaction guaranteed.

Geo. R. Lyon,
4-9db Greene, Chenango Co., N. Y.

WILL SELL 20 COLONIES OF BEES

In Simplicity hives, in fine condition, for \$5.00 each, if paid for now. Will ship bees in spring. Purchasers for the above can, if they prefer, send their cash to A. I. Root, Medina, O.

4-9db I. L. PARKER, Tracy City, Grundy Co., Tenn.

IMPORTED QUEENS.

In April, 11 francs in gold.
May and June, 10 " "
July and August, 9 " "
September and October, 7 " "

No order received for less than 8 queens. Queens which die in transit will be replaced only if sent back in a letter.

CHARLES BLANCONCINI & CO.,
1-11d Bologna, Italy.

THE PRACTICAL BEE-HIVE, one of the best, L. frame, a complete hive, sent on receipt of \$2.50. Bees, queens, and supplies; also Plymouth Rock and Brown Leghorn eggs, \$1.50 per sitting. Address T. G. ASHMEAD, Williamson, Wayne Co., N. Y.

3-5-7d

BEE-HIVES,

One-Piece Sections, Section Cases, Frames, &c.,
OF SUPERIOR WORKMANSHIP, FROM

SMITH & GOODELL,

Manufacturers of and Dealers in:

APIARIAN SUPPLIES,
ROCK FALLS, WHITESIDE CO., ILL.

3-6db Send for Price List.

SOUTHERN HEADQUARTERS FOR EARLY QUEENS,

Nuclei, and full colonies. The manufacture of hives, sections, frames, feeders, foundation, etc., a specialty. Superior work and best material at "let-live" prices. Steam factory, fully equipped, with the latest and most approved machinery. Send for my illustrated catalogue. Address
5-6d J. P. H. BROWN, Augusta, Ga.

LOOK HERE.

New Factory, new Machinery. Having owned and handled bees for twenty-two years, I now offer

APIARIAN SUPPLIES

Of my own manufacture. Our specialty will be on one-piece V-groove buckeye sections. You can not guess how white and beautiful they are. We make hives to order, of all sizes and patterns, though the hive we use is the Scientific hive, made in sections six inches high, put together without nails. Also Frames and Sections. We claim that we can get more section-box honey from this hive than any hive we know of. For circular, address

5-6d J. B. MURRAY, Ada, O.

18-INCH CEM PLANER FOR SALE, FOR \$70.00.

Franks' make; used about a month, and warrant-ed in good order. Address E. Y. PERKINS,
3-6d Jefferson, Greene Co., Iowa.

TAR-HEEL APIARIES.

American Albino Italians (fully acclimated), Syrians, and Carniolans; two latter bred of imported others from Mr. Benton. *Warranted Queens*.—Per half-dozen, in April, \$8.00; May, \$6.00; June, \$5.25. Nuclei, 75 cts. per L. frame of bees and brood; price of queen to be added. Bees, \$1.00 per pound. Ready to mail by March 15, 12 or 15 fine tested golden Italian queens. Safe delivery. \$2.25 cash, or \$12.00 for 6. Send for list, now ready.

4-ABBOTT L. SWINSON, 71-166.
5-6d GOLDSBORO, N. C.

Italian Bees, Nuclei, and Queens,

From Imported and selected mothers. Send for Sixth annual Circular. SIMON P. RODDY,
5-7d MECHANICSTOWN, FRED. CO., MD.

J. W. K. SHAW & CO., Specialists in Italian-Queen Rearing

We are prepared to fill orders for early Queens, tested or untested. A large number are ready for mailing. We hope to supply all demands made in the early spring, and all after, by return mail. Price \$1.00; doz., \$10.00. Tested, \$2.00. Special rates to dealers. LOREAUVILLE, Iberia Parish, La.
5-6d

Comb Fdn., Bee-Hives, and other APIARIAN SUPPLIES.

5-7d JAS. A. NELSON, Wyandotte, Kans.

HAVING moved my large queen-rearing apiary from Lewisville to Milton, I will still furnish pure Italian bees and queens in any quantity and shape. Those wanting to start apiaries should write for prices. I also will furnish eggs from California bronze turkeys, at \$1.50 per sitting of 9.

3-19d GEO. W. BAKER, Milton, Ind.

ALLEY'S

DRONE & QUEEN TRAP.

Send 65e. and get sample by return mail.
4-7d HENRY ALLEY, Wenham, Mass.

EASTERN BEE-HIVE FACTORY

Especially adapted for manufacturing a full line of

* APIARIAN * SUPPLIES. *

Having fitted up with new machinery, designed and built expressly for this work, my facilities are unsurpassed for doing FINE AND ACCURATE WORKMANSHIP.

• 120 •

Full colonies of golden and orange colored, and American Albino Italian Bees for sale; were bred last season, ON PURPOSE to enable me MORE FULLY TO SUPPLY THE GREAT DEMAND.

—ALSO—

Nucleus colonies, bees by the pound, and choice queens. For full particulars and LOW PRICES, send for my ILLUSTRATED CATALOGUE and a sample of the celebrated poplar sections, free on application.

E. L. WESTCOTT,
5d Fair Haven, Rutland Co., Vermont.

EARLY BEES AND QUEENS FOR SALE.

I can ship Colonies, Bees by the pound, and queens, early in spring. Prices on application. Address 5-7d G. W. BECKHAM, Pleasant Hill, Lanc. Co., S. C.

QUEENS, 1886. QUEENS.

Rared from Imported Mothers. Two, three, and four frame nuclei. Safe arrival and satisfaction guaranteed. Send for price list. Address 5-7d FRANK A. EATON, BLUFFTON, OHIO.

DADANT'S FOUNDATION FACTORY, WHOLE-SALE AND RETAIL. See advertisement in another column. 3btfd

JOB LOT OF WIRE CLOTH AT GREATLY REDUCED PRICES.

SECOND QUALITY WIRE CLOTH AT 1½ CTS. PER SQUARE FT.

SOME OF THE USES TO WHICH THIS WIRE CLOTH CAN BE APPLIED.

This wire cloth is second quality. It will answer nicely for covering doors and windows, to keep out flies; for covering bee-hives and cages for shipping bees; making sieves for sifting seeds, etc.

Number of Square Feet contained in each Roll Respectively.

INCHES Wide.	No. of Rolls.
10	1 roll of 72 s. f.
20	3 rolls of 166 s. f. each
22	1 roll of 160 s. f.
24	3 rolls of 200 s. f.
26	7 rolls of 200 s. f.; 38 of 216, 2 of 195, 1 of 156, 2 of 215, 1 of 210 s. f.
28	10 rolls of 233, and 2 of 234, s. f.
34	5 rolls of 281 s. f.
38	28 rolls of 316, 2 of 285, 2 of 317, 1 each of 190, 632, 126, and 215 s. f.
42	1 roll of 245 s. f.
46	1 roll of 366, 1 of 348 s. f.
48	1 roll of 152 s. f.
48	4 rolls of 400 s. f.

FIRST QUALITY WIRE CLOTH AT 1¾ CTS. PER SQUARE FT.

The following is first quality, and is worth 1¾ cts. per square foot. It can be used for any purpose for which wire cloth is ordinarily used; and even at 1¾ cts. per sq. ft. it is far below the prices usually charged at hardware and furnishing stores, as you will ascertain by making inquiry. We were able to secure this very low price by buying a quantity of over one thousand dollars' worth.

INCHES Wide.	No. of Rolls.
22	48 rolls each of 88, 143, 92 s. f.
24	48 rolls of 200 sq. ft. each; 1 each of 120, 168, 190, 40, 150, 140, 140 sq. ft.
26	57 rolls of 216 sq. ft. each; 1 each of 199, 195, 201, 200, 227, 54, 204 sq. ft.
28	73 rolls of 233, 11 of 224, 3 of 219, 8 of 222, sq. ft.; 1 each of 70, 245, 257, 93 sq. ft.
30	36 rolls of 250 sq. ft.; 1 each of 137, 225, 125, 125, 220, 227, 237, 235, 275, 240 sq. ft.
32	13 of 266, 7 of 256, 2 of 253 sq. ft.; 1 each of 250, 275 sq. ft.
34	30 rolls of 283 sq. ft. each.
36	25 rolls of 300 sq. ft. each; 1 each of 288, 150, 279, 285, and 72 sq. ft.
38	1 roll each of 300 and 316 sq. ft.
40	1 roll of 233 square feet.
42	1 roll of 350 square feet.
46	1 roll of 192 square feet.

A. I. ROOT, Medina, Ohio.

HONEY COLUMN.

CITY MARKETS.

CLEVELAND.—*Honey.*—The honey market is very good just now for best 1-lb. white, at 14, with an occasional sale of a single crate at 15. Second grade, 13; 2-lb. sections, best white, 13c. Old, 10@11. Extracted, 7@8. *Beeswax*, 25. A. C. KENDEL, Feb. 20, 1886. 115 Ontario St., Cleveland, Ohio.

CHICAGO.—*Honey.*—Choice comb honey is in good demand at 18c per pound. The best lots arriving here are from New York State and N. Ohio. Extracted sells from 6@8c, and in fair demand.

Beeswax, 23@26c. All grades are wanted in this market at present. R. A. BURNETT, Feb. 25, 1886. 161 S. Water St., Chicago, Ill.

DETROIT.—*Honey.*—No change in the honey market; very slow sales, at prices last quoted; viz., 14c for best white in pound sections, in clean cases. *Beeswax*, 23@25c. M. H. HUNT, Bell Branch, Mich. Feb. 22, 1886.

BOSTON.—*Honey.*—1-lb. sections, 13@14; 2 lbs., 11@12; Slow sale. Extracted honey, 6@8. *Beeswax*, 28. BLAKE & RIPLEY, Feb. 22, 1886. 57 Chatham St., Boston, Mass.

ST. LOUIS.—*Honey.*—We quote comb honey in better demand. Good bright stock, 12½c. Extracted, 8c in large cans; 9c in small cans. Case honey has good demand. *Beeswax* wanted at 23c.

Feb. 23, 1886. W. T. ANDERSON & CO., 104 N. 3d Street, St. Louis, Mo.

MILWAUKEE.—*Honey.*—The demand for choice comb honey in sections has been much improved of late, and selling at 15@16 readily, and we think, if extra fine quality, could get 17c. We will quote 1-lb. sections, choice, 15@17. Dark honey very slow, 12@13. Extracted, scarce, and wanted, 7@8c; old comb, 12½@13. A. V. BISHOP, Feb. 20, 1886. 142 W. Water St., Milwaukee, Wis.

NEW YORK.—*Honey.*—There is no remarkable change in the honey market. The demand keeps up as we expected, and before long all first class honey will be cleaned out.

Feb. 23, 1886. THURBER, WHYLAND & CO., Read & Hudson Sts., New York.

KANSAS CITY.—*Honey.*—Sales are improving, and we have a good trade in comb, although prices are not as firm, owing to good prospects in California for a big crop, having reduced their prices about 2 cts. Choice comb, 1-lb. sections, 16; fair and dark, 12@14; 2-lb. sections, 12@14; extracted, dull and slow. Dark, 3½ to 4; white, 6@7. *Beeswax*, 23. Feb. 22, 1886. CLEMONS, CLOON & CO., Cor. Fourth & Walnut Sts., Kansas City, Mo.

CINCINNATI.—*Honey.*—There is no speculation whatever in the market, and demand is slow for extracted honey from manufacturers, while it is fair for honey in glass jars for table use. Demand for comb honey is slow, and the market is well supplied with all kinds. Extracted honey brings 4@8c on arrival, and choice comb honey brings 12@15c per lb. in a jobbing way. *Beeswax*.—There is a good home demand for beeswax, while arrivals are slow. We pay 23@27c per lb. for good yellow to choice, on arrival. CHAS. F. MUTH & SON, S. E. Cor. Freeman and Central Avenues, Feb. 24, 1886. Cincinnati, Ohio.

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Y&.. WYANDOTTE FOWLS, ITALIAN BEES, QUEENS, and SUPPLIES. Send for Price List. W. H. OSBORNE, CHARDON, OHIO. BB 5-7-9db

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No. 5.

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OUR OWN APIARY.

EXPERIMENTS WITH THE SOLAR WAX-EXTRACTOR IN THE MONTH OF FEBRUARY.

ABOUT the 12th day of February was beautiful balmy weather, during which time the outside temperature ranged about 50°. While strolling among the hives, listening to the happy hum of a few bees in the air, the thought came all once to me, Why not, with an outdoor temperature of 50°, make a test of the solar wax-extractor J. A. Green has just sent?* In response to the request made in GLEANINGS, he constructed this as he would have it, and forwarded the same to us. A moment later I could be seen tugging at a big brown box, wondering what could be done with it in a February sun. I soon had it in position—both the reflector and the tray itself, so as to give the best effect. I then placed, inside the extractor, a 15-cent thermometer in one corner, and some old scraps of comb. With bated breath I anxiously awaited the results. Inside the extractor, almost immediately, but slowly, the mercury began to rise very perceptibly; soon the thermometer indicated 106°. Scarcely imagining that it would go higher, I went away; and when I returned, shortly after, the temperature indicated was 135°.

"Whew!" thought I; "it can never get higher than that, this weather."

It is laid down in the text-books, that wax melts at about 145°. Sure enough, the wax in the extractor was now melting at a fair rate. Again I left; and when I came back, the tube of the thermometer was "clear up full," so that the mercury could rise no higher. The temperature thus indi-

cated was 173°. It did not take me long to procure the best thermometer we had; but by the time I had put it in place of the cheaper one, the sky began to grow a little hazy, so that I could not determine what the results would have been.

While the temperature was up to 170°, as before stated, I remarked to father, who was otherwise occupied in his prepared garden soil, "The comb doesn't melt any more."

"Oh, yes," said he, on coming up, "it is all melted."

I took out a piece of comb (whew! it's hot!), and, sure enough, below the perforated metal were as beautiful yellow wax pellets as one ever saw; and all that remained of the comb now was the cocoons. In appearance, the comb was as perfect as before, though the wax was all, or nearly all, melted off. Of combs that were not more than a year old, scarcely any thing remained. For this reason, one is liable to be deceived and think that his solar wax-extractor is not working. If the combs were mashed up into balls, different results would doubtless be obtained, though I did not try it.

Surely, if the sun extractor will give tolerably fair results in this climate, no one will argue that they are not adapted to the colder climates in summer.

FRIEND GREEN'S EXTRACTOR WITH OUR MODIFICATIONS.

Our foreman of the lumber department constructed another like the one sent us, with a few slight changes. The modification consisted in using a single sheet of glass, instead of two, as in the one friend Green made; furthermore, in place of a looking-glass for a reflector, a sheet of bright tin was substituted, and the box was painted black so as to absorb as much light as possible, and, in con-

*A cut and description will appear in next GLEANINGS.

sequence, a proportional amount of heat. The tin, if it would answer the purpose, would be preferable to the glass, as it would be less liable to be broken. One would suppose that these changes, instead of being improvements, would give inferior results; but a careful test of one as thus modified showed 180°. Facts seem to say, One sheet of glass is preferable to two, as any additional thickness of glass absorbs just so much more heat. For this reason, greenhouse men prefer only one thickness of glass. To illustrate further, I took friend Green's extractor into the greenhouse, where there was a summer temperature of 70°. In here, with summer sun, as it were, I argued in my own mind that the wax-extractor ought to give the same results as if it were outdoors in a hot July day. To my astonishment the thermometer in the extractor, after it had been in the greenhouse for a short time, showed scarcely 170°—somewhat less than that indicated when the extractor was in the open air at a temperature of 50°. Now, while I think that two sheets of glass do not materially lessen the amount of heat, yet, as I see, there is no advantage in having two. The amount of heat lost in radiation from a single sheet is overbalanced by heat lost in absorption with two sheets of glass, as already stated.

The bright tin for a reflector seems to answer every purpose of the looking-glass; besides being cheaper, it will not break.

THE UTILITY OF THESE WAX-EXTRACTORS; BOILING EGGS IN THE SUN.

You notice that we obtained, with the solar wax-extractor, 170 and 180 degrees when the temperature in the open air was only 50°. With a summer heat of 70° outside, if the temperature increases in the extractor proportionately, we ought at least to reach the boiling-point, 212°. According to this, J. A. Green's speculation of eggs boiled in the sun is not so impossible after all. Why, I declare I will coax the "queen clerk" to try her hand at *frying* eggs in the sun when the weather becomes suitable. What fun it would be to run opposition to gasline stoves? "Steady, young man," some one says; "you are a little premature; besides, the boiling-point is not the frying-point."

"Oh! well, my good friend, if the eggs won't fry, I will say the foregoing is 'a scientific pleasantry,' and that it was Green's notion, not mine;" but, mark you, if the speculation should be a *success*, then I will try to claim a share in the idea; and with as much originality as possible I will say, "I told you so."

THE CONDITION OF OUR BEES UP TO DATE.

The Holy-Land colony that I mentioned on page 90, of this current volume, as being uneasy and showing signs of dysentery, is now dead. All the rest of the colonies are in good condition up to date; and as we have had quite a number of warm spells, they have been breeding quite heavily. The result is, that many have run short of stores, and will have to be given more combs of sealed honey, to prevent starving. I would suggest, as caution to beginners, when these warm spells in March come, that they would do well to examine all stocks on their summer stands. If they have been breeding heavily as above, and their stores are low, feed them or give them sealed combs of honey.

A little caution now may save you a few colonies later. If the weather is such that the bees are not flying much, I don't think I would tinker with the

colors unless you have good reason to think that some particular swarm is running short of stores.

Two bad months are before us, and so we can't "count our chickens" yet. I will report later.

ERNEST R. ROOT.

USE OF THE THERMOMETER.

HOW IT MAY MISLEAD US IN USING IT IN A BEE-CELLAR.

In talking about temperature, I want to premise that it is very doubtful if any one can lay down a fixed rule for temperature, that will be safe for all others to follow. If A has fixed upon 45° as the best temperature for his cellar, B may have his bees in different hives, or packed differently, so that, if put in A's cellar, it would be better to have the temperature above or below 45°. Smith and Jones may have their bees exactly alike as to hives and packing, both in equally good condition. Smith says he keeps his at 40°; Jones, at 50°. But the same thermometer, placed alternately in each of the cellars, on one of the central hives, shows that the bees in both cellars are kept at exactly the same temperature. Smith has his thermometer hanging in the coldest spot in his cellar; Jones, in the warmest. Or, the difference may be mainly due to a difference in thermometers, for I have noted a difference of 7 degrees in a lot of thermometers hanging in the same spot in a drugstore.

Of course, it is of value to get the experience of others; but each one must decide for himself at what point his bees keep best, and then, with the same thermometer always hanging in the same place, try to hold steadily at that point.

WARMING AND VENTILATION.

The same means used for warming may aid in ventilation, so the two may well be considered together. In my shop cellar there is no special provision made for ventilation, excepting that a 4-inch stove-pipe runs up through the floor. I don't cite this because I think it's right, but I want to work from facts, and, moreover, there are many who may want to know what to do with just such cellars. The cellar is 18 by 24 on a side hill; a large double door, or, rather, two doors with a 9½-inch air-space between them, leading out on the level on the south side; a small window with double shutters on the west, and one on the east side, and a trap-door overhead. November 10, 124 colonies were put in the cellar. In a few days the bees appeared somewhat uneasy; there was a close, disagreeable smell, and mold was found in spots over the earth floor. A wood fire made in the cellar helped matters, drying it off, and of course the warmer the air the better the ventilation. The heat, however, was very unsteady, and at night the fire would die out entirely, the exit for the air being greatly lessened by the closed stove, and in the morning the thermometer would be down.

About the middle of December I determined on more radical measures. I put in the middle of the cellar a common small cylinder stove for anthracite coal, the inside diameter between the fire-bricks being a little more than eight inches (I also put two in the house cellar). In this I have kept a constant fire, day and night. It makes a steady heat, so little light that I think it does no harm; and the stove-door being always open, makes the best exit for air. The mold has disappeared, the air always smells sweet, and at this writing the bees appear quiet, and

are doing nicely. Of course, there is time for them all to die between now and May.

In ordinary weather I find it best to keep the trap-door wide open, the room overhead being darkened; but in very cold weather, every thing is kept shut tight. Once or twice, with the mercury outside below zero, and a strong wind, the cellar has been as low as 36°. With close attention it might have been kept above this. During the last of December we had a warm spell, the outside air going above 40°. At this time I kept doors and windows open at night, and sometimes through the day; but the coal fire was kept steadily going, because, if not needed for heat, it was for ventilation. The hardest time I have found to keep bees quiet has been toward spring, in a cloudy, rainy, damp, warm time. The damp air is so light that it does not, by its weight, force its way into the cellar, and the cellar becomes foul. At such a time, would not a fire in the cellar, even though the bees were already warm enough, make the cellar air lighter, so that the outside air would take its place? My observation leads me toward that belief. A serious objection to heating cellars in this way is the expense and constant care. But where a large number are kept, it may be money and time profitably spent, if thereby the dead-list may be shortened. What I should especially like, however, is some arrangement by which the bees could be placed in the cellar in the fall, and left without any attention till time to take them out in the spring. I have been experimenting a little, and thinking a great deal about sub-ventilation, and had intended to write about it when I commenced this article; but I see I must wait until another time. How do Ira Barber and others keep their cellars so warm? Two of my colonies have starved to death. Poor management!

C. C. MILLER, 179-338.

Marengo, Ill., Feb. 23, 1886.

Friend M., I grant all your points except the ones about the thermometers in the drugstore. If they varied seven degrees, they were a poor lot and ought to have been returned to the maker. Perhaps it was only one or two that were so far out of the mark. In that case I should say they were "out of kilter." See the instructions we give in regard to the use of thermometers, on the one we mail you to-day. And, by the way, it would be an excellent way to test the thermometers, to ask the dealer to show you a dozen. Lay them side by side on the counter; and if they don't all tell the same story within at least two degrees—well, I don't know what would be best to do. Perhaps the charitable way would be to tell him to show you a dozen higher-priced ones; and if the higher-priced ones don't tell the truth better, then I would complain.—It seems to me that keeping a fire all winter long is very expensive business, and I would try to make some automatic arrangement. A reservoir of water warmed up once a day would do it to a dot, if it didn't keep the air too damp; and I am inclined to think that the dampness would do good and not harm. What say you? During this past winter, a reservoir holding perhaps 20 barrels of water, right in the center of our greenhouse, has kept the temperature just as nice as could be, with nothing but sheets of glass intervening between the outdoor air that was 15

degrees below zero. We have not had to get up nights once.

OVERSTOCKING A LOCALITY.

ALSO SOMETHING FROM FRIEND HEDDON IN REGARD TO SUGAR STORES COMPARED WITH NATURAL STORES.

I FEEL that I should publicly thank Prof. Cook for his kind words and friendly criticism, found on page 98. I may as well say it now, even if the Professor does see it, that all through our numerous discussions of subjects upon which we could not agree, I have been compelled to esteem his integrity and judgment as the very highest. I always wish and sometimes dare to hope, that the Professor's opinions regarding "swelling our ranks" are correct; and, as he says in closing his review, that I am "mörbid" upon that question, but as yet I can not find the evidence to believe with him as I desire.

I wish it were true that we might multiply the number of honey-producers tenfold; but however much I may desire this, I can not believe that much more increase in our ranks can take place without a suffering on the part of those already engaged. I think I have had letters from five old stalwart producers, in which they have especially complimented the part of the little book that friend Cook believes is over anxiously mistaken.

Another point that seems strange to me is, that some of our bee-keepers, among whom I may mention friend Wright, on the same page, who have never expressed the least fear regarding increasing our product by the increase of producers, are now frightened because some who believe that sugar syrup is superior to honey for winter stores are feeding said syrup, thus causing an increase in the honey supply. Surely, these men must agree with me rather than the Professor regarding the point in question. I think Mr. Wright makes a true statement when he tells us that the sugar we feed increases the market supply of honey, pound for pound, and that the relation between supply and demand governs prices, which means our success or failure.

But right here I think Mr. Wright's argument ends. I know it is natural for any honey-producer to feel just as Mr. Wright does, when he sees his products begging for consumers at a price below cane sugar; and no wonder that his judgment tells him that, before we feed our colonies the higher-priced sugar to take the place of the lower priced honey, we had better let at least a portion of them die. Such reports as this of Brother Wright's (and they are more numerous than I wish they were) prevent me from believing with friend Cook, however much I may desire. I have bought, sold, and produced comb and extracted honey in retail, jobbing, and wholesale way, for nearly eighteen years; twelve of which my father has been a wholesale commercial agent, all of which has given me some advantages in gaining a knowledge of the several points made in Mr. Wright's article, and I will give you my opinion regarding a few of them, to be taken for just what it may be considered worth.

First, the cry of "adulteration" has very little tendency to deter purchases of our product. A commodity will usually sell upon its merits, judged by its looks, flavor, and effect. We well remember the wholesale war made against glucose in sugar

syrups—how refiners started the cry, which echoed in all the papers of the land; a tumult, compared with which all that has been said regarding adulterated honey might truly be called a faint whisper; and yet you will find, if you take the pains to ascertain, that ever since that time the consumption of commercial syrups has steadily increased. When I began using the extractor, years ago, liquid honey was so novel a thing that its lower price at once gave the impression that "it must be adulterated." That was the cry; and the echo of that noise has not died out yet, though I verily believe that it has had no effect in lowering the price nor demand for my honey.

Let us consider the final outcome of "sugar-feeding for winter." Whatever may be true collectively, will not each individual decide the matter for himself? and will that decision not be governed by what he believes to be the best? After making several quite extensive experiments, and talking with others who have done likewise, I am compelled to believe that pure cane-sugar syrup is better than any honey for bees during their period of confinement. If I find that, after all, I am mistaken in this, I shall be eager to announce my discovery, and rejoice that our excellent product is excellent *everywhere*. But let me assure you that it will require something more than desire, or glutted honey markets, to change the opinion that has been compelled by what seems to me to be positive proof. Bee-diarrhea is the condition to be dreaded. It may be called the one cause of our winter troubles. It results from an excessive accumulation of fecal matter. I never saw, and never saw a man who had seen bees that had been confined three months or more upon any kind of natural stores that did not discharge fecal accumulations on their first flight. I confined over 70 colonies for 151 days (five months), at the end of which they flew, with bodies apparently as slim as in autumn, discharging nothing, not even water, as far as careful scrutiny could detect. These colonies passed the winter in a cold cellar, where three-fourths of those with natural stores died with bee-diarrhea. Their stores consisted of pure cane-sugar syrup, there not being one drop of honey, or bit of bee-bread, in the combs. I do not think this can be done with natural stores; but if we can bring our bees through their longest periods of confinement upon natural stores, without their accumulating sufficient fecal matter to produce disease, provided we make all other conditions favorable, then I believe that natural stores will finally be our choice. That this can be done, and is done year after year, we have ample evidence; but I doubt that it can be done in all localities, especially my own.

I am giving the matter a critical test this winter; and though I should rejoice to know that the natural stores of my location are safe, one year with another, with all other conditions favorable, yet if I find they are not, I shall also rejoice in the fact that we can give them syrup at the rate of 1000 lbs. per hour (all of which will be taken down within about 24 hours), and that, too, without having to extract any natural stores.

JAMES HEDDON.

Dowagiac, Mich.

Friend H., I think it is true that there are some localities somewhat overstocked; but at the same time, there are thousands upon thousands of localities that are not stocked at all, so to speak; therefore let us scatter

ourselves, and take up the waste places.—In regard to sugar syrup in place of natural stores, there is one point I forgot to mention, and I tell you it is a grave one. If you go to buying cheap honey to use in lieu of sugar stores, you not only stand a good chance of getting honey that will give the bees dysentery, but you may also give them foul brood; whereas if you go to your grocer and get a barrel of granulated sugar, there is no possibility of any such event. In fact, the sugar feed would go a great way toward banishing the foul brood, after having let the bees consume all the honey. I told you, a month or two ago, that honey was being put upon the market for sale that was extracted from apiaries terribly infested with foul brood. Suppose a bee-keeper gets hold of some of this, and feeds it instead of sugar for winter. Read the following, ye who go on so about sugar feeding:

You published a piece showing that foul brood was not contagious, and at the bottom consented to it yourself. Well, my neighbor bought foul-brood honey in Cincinnati, and he lost about 40 colonies, and spread it in two of my apiaries. My loss was 12 colonies. The amount of loss in other apiaries is considerable. That much for the diabolical publications. I know several cases of its being contagious.

W. F.

Feb. 20, 1-86.

I can give the name and address of the writer of the above, if need be, but I think perhaps he wouldn't care to have it published, for he will doubtless set to work and get the foul brood out at once. I need not tell you, that I wrote to him, asking where anybody ever said that foul brood is not contagious, but I have not yet received his reply.

NOTES AND QUERIES.

CONTRACTING BROOD-NEST.

FRRIEND Doolittle and others advocate contracting the brood-nest to get section honey. Do they contract the honey-board to the size of the brood-nest, or cover the size of the hive with sections?

WM. G. NORTON.

Honeoye Falls, N. Y.

[We believe friend Doolittle practices reducing the room above the cluster by division-boards, whenever the size of the colony makes it necessary, the same way that he contracts the size of the brood-nest.]

THE HONEY PROSPECT IN CALIFORNIA.

The prospects for a honey crop the coming season were never better. Vegetation is unbounded.

R. WILKIN.

San Buenaventura, Cal., Feb. 18, 1886.

A DEPTH OF 125 FEET SHOWS 50°.

There being a desire to know the temperature of the earth at different depths from the earth's surface, I made a test of my well, which is 120 feet in depth, made by boring, and inserting a two-inch pipe. The water is drawn by wind power. I let it pump until I was sure the water came from the bottom, then I put a thermometer in a pail and let it pump on it; the mercury stood at fifty degrees above zero.

T. S. BULL,

Valparaiso, Ind., Jan. 23, 1886.

WIDE FRAMES AND SEPARATORS.

ARE THEY A CONVENIENCE OR A NUISANCE?

WHEN you said, Mr. Editor, in GLEANINGS for Jan. 15, page 45, "It is a little amusing to see friend Heddon go back and declare in favor of wide frames, and *separators* also, after the way he has denounced both," I said to myself, "Good! for this will cause Bro. Heddon to explain to us in what manner he has been enabled to overcome the difficulties he once found in the use of them, which was so great that he discarded wide frames, and denounced separators as 'nuisances.'" After thus thinking, imagine my surprise to find W. Z. Hutchinson writing on page 87 of GLEANINGS, "Can you show, friend Root, where he (Heddon) has harshly denounced wide frames or separators?" and saying, after a search through numerous back volumes of the bee-papers, "I can not find that Mr. Heddon has ever denounced separators."

Well, thought I, can it be that I am so much mistaken? for it can not be that a man who has championed another, as Bro. Hutchinson has friend Heddon, can not know whereof he speaks. It was but the work of a moment for me to turn to page 33 of the A. B. J. for 1881, where I find recorded, under the name of James Heddon, these words:

"Separators cost me too great a portion of my surplus crop, to say nothing of their *first* cost and trouble of manipulating."

On page 66 of same volume I find this:

"Separators are better adapted to some supply-dealer who can 'grind' his ax with them" (than for raising comb honey, I suppose is to be inferred).

Again, on page 75, A. B. J. for 1881, I read:

"All separators are a great drawback to the production of comb honey."

Then on page 106, these words appear:

"If it is strange that I should declare against the use of *all* separators," etc.; while on page 170 of same volume he says:

"Yes, it is true that we do not need to attach any costly and complicated contrivances (separators) to make our chosen surplus system work to our perfect satisfaction." (Italics mine in this individual case). By again referring to page 33, I read:

"There is no need of the nuisances called separators," which I am sure is a harsh denunciation, if none of the rest can be so construed.

What think you, Bro. Hutchinson? Now, I have not written this altogether to prove that Bro. Hutchinson made a mistake, and that friend Root was right, but mainly for the purpose of drawing Bro. Heddon out, so that he will tell us wherein he has remedied the defective system of separators, so that he has gone from the calling of them "nuisances," to using and recommending them to others. If, as he says, they cost him "too great a portion of his surplus crop," how has he brought it about so that now they cost him none of it? and if "all separators are a great drawback to the production of comb honey," what special plans has he adopted regarding separators, so that this drawback has been overcome? These questions are of vital importance to us; and if Bro. Heddon has no secrets in the matter we should like to have him explain. I have always used separators in the same way Bro. H. now does in his new hive, and called them a convenience rather than a "nuisance;" and if there is any knowledge to be gained

whereby I can add to my crop of surplus honey, I am interested to gain it. Now about wide frames.

On page 170 of A. B. J. for 1881, Bro. Heddon says, "The reason I discarded the broad (wide) frame system was because the sections were so stuck up with propolis;" while on page 100 of present volume of GLEANINGS he says, "I was driven from their (wide frames) use, as well as the hundreds who went with me, from our experience with them in two-story supers." Now, Bro. H., which of these reasons is right? If the latter, you have told us how you overcome the objection to "two-story supers;" but if the former, you have not told us how you overcame the propolis question. Of course, you have in some way, for this propolis question has been raging for years, and I am sure you would not leave your cage system, which was so *free from propolis*, and go to using the wide-frame system, without overcoming this defect. Propolis on sections is a nuisance, be the same little or much; and a plan which will allow of the filling of the sections with nice comb honey, without changing the clean appearance which they present when placed upon the hive, will be heralded with delight by all, and give great honor to him who works out the plan. Surely none of us can object to any one changing his plans as often as occasion requires; but in doing so it is well to say that previous views were mistaken ones, or else give to the public how our former objections have been overcome. When friend Betsinger invented wide frames in connection with separators, to be used one tier high, he gave us one of the greatest conveniences regarding the production of comb honey; and Bro. Heddon's going back to these is one of the best parts to his new system of management. G. M. DOOLITTLE.

Borodino, N. Y., Feb. 13, 1886.

SOMETHING FURTHER ON THE TEMPERANCE QUESTION.

IS LICENSE OR TAXATION TO BE CONSIDERED AT ALL?

IF you have no objections, I will offer a few words in reply to Prof. Cook, on page 47. He says: "Why will not a law like that adopted in some of the States suit all, do more good, and get the support of all temperance people? That is, a license with a heavy fee in conjunction, with local option in every town, village, or city where it can be carried?"

A right to grant a license implies a right to withhold it; hence a license law which does not compel the granting of licenses is in effect a local-option law. Whether the option should be exercised by States, by counties, or by towns, is the question. Prof. Cook says by towns, villages, and cities, and for a high price. This is just what we have now, and have always had in Wisconsin. But this is far from being a model temperance State, though the price of a license is not less than two hundred dollars. The amount paid is a direct *bribe* paid to the village for the privilege of cursing the community.

Our village of M. has about 1000 inhabitants. It collects for liquor-licenses, two thousand dollars annually; four-fifths of that amount is paid into the village treasury through the saloons by the surrounding agricultural towns. In return for this, the agricultural interests are taxed to support the paupers and prosecute the criminals, made such by

this worse than useless traffic. If this monstrous evil must be licensed, I insist that all income from such licenses should be paid over to the county, and applied to the support of the poor or the prosecution of criminals. If all license fees were paid into the county treasury it would take away from villages the chief inducements to grant licenses. If we had local option by counties instead of by towns, many counties would prohibit, and, step by step, prohibition might be accomplished everywhere.

I have great respect for Prof. Cook and his many valuable articles on other subjects; and if he had not asked the influence of GLEANINGS for his plan, I would not have tried to state mine. Nothing short of total prohibition will satisfy me.

Mauston, Wis., Feb., 1886. F. WILCOX.

Now, friends, I think we shall have to let the matter of temperance rest where it is for the present. I am sure the readers of GLEANINGS are all in favor of stopping the liquor-traffic; and although we may differ widely in regard to the means to be employed, can we not hold ourselves, all of us, in readiness to push ahead wherever God seems to point the way?

CHAFF HIVES WITH ONLY EIGHT FRAMES INSTEAD OF TEN.

WHAT THICKNESS OF PACKING IS NECESSARY, ETC.?

WHY not make chaff hives to take eight frames instead of ten, somewhat after the Falcon style? Use a Simplicity hive if you want sections in wide frames; but I think cases will take the lead for holding sections. Have the hive tall enough, with the cover, to hold two or three sets of $4\frac{1}{4}$ sections. We could have the ends of hive permanently chaff-packed, and one side too, if that would be best. There are some points in the Falcon hive that I think would suit me better than the Simplicity chaff hive; but I think both of them are too large. I think six L. combs are enough to winter any ordinary colony of bees on; and then if we had eight-frame hives we should have enough combs to take care of.

I can't see the use in having a hive as large as the Simplicity chaff hive. I understand they have only three inches of chaff. Now, if we have three or four inches of chaff at the sides, and nine inches for the combs to winter the bees in, we should not have such a very large hive. Then have one side of the packing, or both, for that matter, movable, to put in the other two or more combs in the spring, or as they are needed. I have made up my mind that chaff hives are the cheapest in the long run, for this country, though I have had very good success wintering in the Simplicity (my style) for several years. Last winter I lost by starvation, dysentery, and queenlessness, 7 colonies out of 26, and that was by far the heaviest loss I ever had. I should think two inches of chaff would be enough for the ends of the hive, and three or four at the sides.

I have three colonies of bees in Simplicity chaff hives. I just put them in this fall, therefore I am not prepared to say how I shall like them. I am thinking of making chaff hives for next year, but am at a stand about what to get. J. S. WILLARD.

Bedford, Taylor Co., Iowa, Dec. 30, 1885.

Friend W., an eight-frame chaff hive would

answer nicely, without doubt; but it would be making another style of hives for our catalogues and price lists, for it wouldn't work with the implements and appliances already in use for the ten-frame hives, and would in many respects complicate matters more than they are already complicated. Your bees would also be more liable to starve, if you make the brood-nest smaller. I think it will be far better to use division-boards to reduce the space at such seasons of the year as we wish the space reduced.

SOLAR WAX-EXTRACTORS.

PREVENTING AFTER-SWARMS, ETC.

I SEE on page 776, Nov. 15, 1885, you ask how many of the friends have used the solar wax-extractor. I have one I made this summer. It is a box 20 in. wide by 30 long by 12 deep. I put a false bottom in the middle, about 21 in. long. I got a sheet of tin 20×28, cut off two corners of the tin at an angle, then turned up the edge one inch all around, except the two inches in the center of the lower end; nailed a rim around one end and the sides of the box, with two saw-cuts about $\frac{3}{4}$ in. apart, and slipped in, from the open end, two lights of glass, 20×30, or lights 15×2; then close up the end, putting in a pan on the bottom. Your wax on the tin now drips on the raised bottom. Set it on the south side of the house, inclined to give what slant you want, and in a very short time, with the outside heat up to about 70° (I think it was) the wax will all be melted. You want to look out and not take out some of the refuse with your fingers, or you may shake them as badly as I did. If I were to make another one I would make the sides flaring; and would not a black iron dripping-pan draw more heat in there than the bright tin? You want the thing made so no current of air can pass through. It makes the nicest wax I ever saw.

Our honey crop out this way is very slim this year—only 600 lbs. from about 30 colonies in spring, and a little more than that of extracted. I like the Heddon way of preventing after swarms, first-rate.

SOME QUESTIONS IN REGARD TO THE CARE OF STEAM-ENGINES.

I want to know if a steam-engine and boiler corrode, rust out, and become worthless, about as quick if it is not used more than two or three months in the year, as it would if it were used and cared for properly the whole time? What causes the boiler to explode when the water gets too low? Is there any book on the engine, telling how to run and take care of them? V. W. KEENEY.

Shirland, Ill., Nov. 23, 1885.

Friend K., we like the solar wax-extractor too, and I was greatly astonished to find that the heat of the sun was ample, even in the middle of February, and we made some of the nicest wax with it that I have ever seen. There is no trouble in getting heat enough. Perhaps a pan made of black iron might do better than a tin one. We will try to test the matter by experiment.—It depends upon who runs the engine. If it were properly fixed to lie idle, I think I should prefer to have it so; but if it were dropped right where it was last used, and no pains taken to prevent rust and damage, I would rather have it in constant use. If I

am correct, letting the water get low does not cause the boiler to *explode*. It does, however, draw the flues out of shape, and cause the boiler to be sure to explode, if the engineer is so thoughtless as to pump water into it when red-hot. If, however, he finds he has by accident boiled all the water out, and heated the flues red-hot, he can just let the fires go down, and no harm is done. When the flues get cold, he may even go on with his work, if the boiler does not leak so badly as to put the fire out. Explosions are generally caused by pumping water on to red-hot flues. This results in making a great volume of steam so suddenly that the safety-valve is entirely inadequate to carry it off, so that everything is blown to pieces with an explosion. I do not know of any book on the care of the steam-engine—at least, nothing up to modern times. If any of our readers know of such a work, I should be glad to put it in our book list.

EGG-LAYING OF QUEENS.

IS IT THE BEES OR THE QUEENS, OR THE SIZE OF THE CELLS THAT DETERMINES THE SEX?

I READ with much interest the able article from the pen of Mr. Chas. Dadant, as I always do any thing from him. Mr. Dadant's statement, that the use of worker comb, or worker foundation, almost wholly precludes the deposition of drone-eggs, and therefore the presence of drone-brood, is certainly a thoroughly well-established fact, and is one of the strong arguments in favor of the use of foundation. Yet, does this fact necessarily lead to Mr. Dadant's conclusion, "A queen in good health lays drone-eggs in drone-cells, because they are greater; and worker-eggs in worker-cells, because they are smaller"? If, as I think, the queen knows what she is about, and acts from volition, then surely she would not lay the unfertilized egg in a cell that would restrict the size and full development of the drones, or male bees. I think the queen knows the large cells are for drones, and will lay the unfertilized eggs in no other, except by mistake. The fact as I gave it before, that very short worker-cells, hardly deeper than those of our best foundation, sometimes receive eggs that develop into workers, as no doubt Mr. Dadant has witnessed, is very significant; and can any one doubt, after examination, that the queen lays the egg in the queen-cells? But, if any other proof were needed we have it at our command: In some species, like *A. Indica*, the drones are smaller than the workers; while in wasps, like *Vespa vulgaris*, the cells are all equally large; yet the whole life economy of the *Vespa* and *Apis* genera, so far as reproduction is concerned, are identical. Our ants, too, closely related to bees in many respects, produce males and females in the same manner as do bees, and their eggs are not placed in cells at all.

Mr. Dadant's point, that the reason why young queens lay some drone-eggs in worker-cells is because the queen is small, and so her abdomen is not compressed, would surely have weight if it stood alone. Yet, were this the case I should suppose there would be more drones. They are usually very few and scattering. In my apiary I have once in a while had a very small queen, hardly larger,

though slimmer, than a common worker, even in her most fecund days; yet her eggs in worker-cells produced workers. Has not Mr. Dadant noticed the same? So I still think these young queens at first fail to manage adroitly the muscular machinery that extrudes the sperm-cells from the spermatheca.

Mr. Dadant's conclusions as to wasps are not warranted, I think. The wasps that Sir John Lubbock referred to are our mud-wasps, not our paper-making wasps. These mud-wasps do vary the size of the cells—those containing the males being the smaller. So the point Mr. Dadant makes is hardly warranted, I think, by the facts in the case.

Do animals drop eggs at just such a time, irrespective of surroundings? I doubt it. Some of our birds that usually lay only five eggs will continue to lay as many as thirty, if we keep taking the egg from the nest. Thus, a flicker, *Colaptes auratus*, laid over thirty under these circumstances, here on our college campus.

From all these facts, I still think the queen knows what she is about, and that fecundation of the egg is voluntary, not automatic.

I wish to express my pleasure, that Messrs. Dadant & Son are revising Mr. Langstroth's book. I think he could not have chosen more wisely.

Agricultural College, Mich. A. J. COOK.

Friends Cook and Dadant, may I now put in a thought which I believe neither of you have touched upon? It is this: That the worker-bees are a factor, as well as the queen, in deciding whether they will raise drones or workers. You may remember, that some years ago there was a discussion in regard to the swarming impulse. Does the queen lead out the swarm, or do the bees? Several brought forth very clear facts to show that it was the queen that went out, and that the bees followed her. Others brought equally plain facts to show that the bees got up the excitement and poured out of the hive, and finally the queen joined in and went with them. But we were finally forced to conclude that it was sometimes the one and sometimes the other; or, most likely, the queen and bees both acting in perfect harmony.—Now for A. I. Root's theory about determining the sex. I suggest that the bees have the power, at least very largely, in their own hands, so to speak. I have tried in vain to get early drones, by placing the drone-comb in the center of the brood-nest. The queen would not occupy these drone-cells until other queens in other hives began rearing drones also. If I fed the colony, the bees used this drone-comb for storing honey; and it has just occurred to me that the queen didn't lay any eggs in the drone-comb, because the bees did not fix the cells, and invite her to occupy them. Is it not true, that a queen never occupies any cell, drone or worker, until the bees first clean it out, varnish it over, and give it that fresh, inviting appearance, with which we are all so familiar? Are we sure that they do not say by actions, if not by words, "When your highness gets that little patch of comb filled, please come over here and take these next"? Who has not tried to get a queen to fill combs when the cluster of bees was so small they couldn't get cells ready for her fast enough? She would fill all the cells

that were properly prepared, and then, instead of going over to those nice clean worker-cells the bees hadn't glossed over and puttered with, would either stand around idly, or else go over the cells again, where she had just deposited eggs, putting two or more in a cell, and worrying the owner so much that he would be prompted to write a letter to A. I. Root about it, and ask if he hadn't better pinch her head off, when the queen was just as good a queen as could be, with only a pound of bees or a little more.

"THE OTHER SIDE" OF FLORIDA.

TWELVE MONTHS IN FLORIDA.

I SEE you publish a great many letters in favor of Florida. I send you a letter I got from the Charlottesville *Chronicle*. It looks at Florida on "the other side." — HARRY GRIFFIN. Charlottesville, Va., Jan. 7, 1886.

Editor Chronicle: — Hearing that a good many citizens of this section are considering the expediency of emigrating to the "Land of Flowers," probably persuaded thereto by the flowery pamphlets and maps so industriously circulated by the railroad and land companies; and, actuated by a desire to save those contemplating such a step from the disappointment almost sure to result, I send you the substance of some notes taken "on the spot."

In the first place, the much-lauded climate is a most unmitigated fraud—to a native of Piedmont, Virginia. Thermometers are "no good" there. They lie winter and summer. It is more disagreeably cold when 32° F. is indicated than when the mercury falls to zero here; and the almost vertical rays of the midsummer sun are so intensely hot and so thoroughly enervating that the most energetic man becomes willing to do nothing but pine for his mountain home again. My observation is that they embrace the first opportunity of getting out of a Florida summer, devoutly promising themselves not to be caught again. The thermometer may not indicate more than 90° F. when it oppresses one as much as 105° F. here.

The soil, in the greater portion of the State, is no soil at all, but vast sand-bank, with a slight admixture of humus, which is exhausted by a crop or two. It is necessary to fertilize well every year to obtain a good crop. Frequent wide expanses of swamp and thousands of bogs and ponds detract from the value, and add nothing to the beauty of the country. While there are some fair lands, termed "hammocks," they are generally so infested with insects, and so unhealthy, that it is unwise to live near them. *Lovely*, they certainly are, with each twig and limb fringed with Spanish moss, which often droops many feet and gracefully sweeps to every breeze. But, amidst the tropical beauties of the scene, malaria insidiously lurks, ready to seize upon the casual intruder upon his native haunts. Except the veritable hills, the whole State lies under water during the rainy season.

As to products: Nearly every one who goes to Florida has the *orange craze*, and forthwith falls a prey to one of the legion of land agents, who will often palm off on the innocent an admirable location—for a duck farm! Every one is saving orange seed, planting orange seed, setting out orange-groves, millions and tens of millions of orange-trees! While many will die from frost or some mismanagement, yet it is patent that the business is overdone, and the profit in orange groves falls to the land speculator who sells off "choice" (?) lots at ridiculously fancy prices.

The lemon, being more easily killed by frost than the orange, can be profitably grown in few localities in the State; for the "line of no frost," so much dwelt upon in the effusions of general passenger agents, must be set down as a bare myth, frost being seen and felt in all parts of the State. In the more southern sections, pineapples, bananas, Japan persimmons, cocoanuts, are being profitably raised. But those who go to those parts must expect to see mosquitos by the quintillions, and carry a trunk full of quinine to ward off chills.

Market gardening, now rapidly assuming large

proportions, is the future business of Florida. The lands require heavy fertilizing, and the crops are occasionally nipped by those "unheard of" frosts, yet the early products bring such fabulous prices that the business is, beyond doubt, the most promising in the State.

In conclusion, while money can be and is made in the ways mentioned, the intending emigrant from Piedmont, Virginia, should remember that he will have to contend against such hills and pests—unknown here—as will try his patient soul though he be a very Job. As surely as he tries orange-growing in Florida, he will concede that, if the same attention were given our pippin-orchards as is necessary to be paid to orange-groves, the pippin-orchards would be the more profitable. And as surely as he spends a year in that much-boomed sand-bank will he further concede that he was a fool to leave this goodly heritage of land and clime, and be ready to swear that, if Fate kindly permits him once more to see his "own, his native land," he will never, *no, never!* NO, NEVER! seek "Eldorado"—"Land of Flowers!" or thirst for the "Fountain of Eternal Youth."

JAY C. ELL.

Why, friend G., I do not think the letter is such a bad one, after all. It is probably a very fair and candid statement of the way the average Northern citizen would look at things when there. And there is one point I want to call special attention to. If the same attention were given to our pippin-orchards right close about us, that they are obliged to give orange-groves in Florida, to get even an average crop, what sort of pippins should we have? Friend Cole, in his book, tells what the effect was on an old worthless apple-tree on a hillside by giving the ground around it (and under it) intelligent culture.

A WHOLE APIARY OF HIVES WITHOUT BOTTOM-BOARDS.

IS IT NOT AN ADVANTAGE TO USE HIVES WITHOUT BOTTOM-BOARDS?

IN GLEANINGS, Nov. 15, page 793, I notice where you say a hive which Conrad Weckesser mentions is a novelty. Now, I wish to state that one of the most successful box-hive men I have ever heard of in Texas does not use a bottom-board at all, and he keeps from 60 to 100 colonies of bees all the time, and has kept them for years. His name is J. M. Bell, of Winton, Gonzales Co., Texas. He simply places a block about 2 inches square and an inch thick under each corner, to keep the hive from settling into the ground in wet weather. In wintering he moves the hive about its width to one side (so as to get a clean place, and get all trash that may have accumulated during the summer, outside the hive), and banks the earth up to the hive all around, leaving for a winter entrance two $\frac{1}{4}$ -inch auger-holes, previously bored into the hive about 3 inches from the bottom edge of the box. I tried some box hives myself the last season, and I find that if the hive is open on all sides underneath, that the bees seldom lie out in our warmest weather (and I assure you we have weather warm enough to melt beeswax, and make it run like oil). I am going to try a lot of Simplicity bodies, without bottom, in the way mentioned above, the coming season, as it will be quite a saving in the way of labor and material, if we can get along without a bottom-board. Of course, this plan will work well only on a sandy slope where the ground will drain and keep washed clean. I happen to own just such a place, so you see I am favorably located for the experiment. I will report to

GLEANINGS in due time the result of my experiments, when you will be able to judge for yourself whether the plan is a good one or not.

REVERSIBLE FRAMES.

Speaking of reversible hives, page 771, Nov. 15, why not use the Quinby closed-end frame, and use no outside shell at all for the hive, but simply fasten the required number of frames together with a clamp, and when you want to reverse just turn the whole thing bottom up? M. BROERS, 2).

Gonzales, Texas.

Friend B., instead of having the whole bottom of the hive open, I would suggest that it be contracted; and if this contraction be done so as to make a sort of hopper below, at the same time it lets in the air, it will tumble out all the dead bees that drop down from any of the combs. When I first invented the Simplicity hive, I suggested that they could be set on four half-bricks, without any bottom-board; bank up the sides to keep out robbers, and to keep out too much of a draft of air when the weather is cold. I have had very good success with working hives in the summer with nothing but the ground for a bottom.

thought I should like nicely painted hives. I want a hive from which we can take honey without killing the bees. I guess we can not do that with nail-kegs. Besides, nail-kegs are not very pretty bee-hives."

Here Jane asked her father, "What are movable-frame hives? In both the book and magazines I read much about them, and it seems all bee-keepers are using them; but I do not know what they are."

Mr. Meek replied, "I am glad you asked that question, because movable-frame hives are the kind I prefer, and the kind I want the firm to use. Bee-keepers often want to open their hives and examine them, or they would like to take a comb filled with honey or young bees from one hive, and give it to another. In the old-fashioned box hives they could not do this. At length some men who had given much study to bee culture conceived the idea of compelling the bees to build each comb in a neat little frame. We can handle that picture on the wall easily, because that and the glass protecting it are held securely in a frame. Suppose that, instead of that picture, there were a comb of honey in that frame, we could handle it as easily as the picture and glass. Bee-men now have all their combs built in frames, and such hives are called movable-frame hives."

Mrs. Meek here asked, "Are these frames any advantage to the bees?"

Her husband replied, "No. The bees would prefer a clean empty box to a box filled with frames; and if a person does not intend to handle the frames, it is a needless expense and trouble to have them. A mere box would be cheaper, and would suit just as well. Now, do you expect to handle your frames?"

"Oh, yes," said Tommy.

His mother laughed, and said, "Wait, Master Tommy, until you receive a few stings, and see how you stand them, before you talk about opening a bee-hive and taking out the frames."

"But, mother," said Jane, "I have been reading in Mr. Langstroth's book, and also in the magazines, that we can quiet bees by blowing smoke upon them; and I also learned that we can buy a little instrument for this purpose, called a bellows smoker, which is very useful to any one handling bees. I suppose the smoke makes them stupid."

Mr. Meek said, "That is not the reason. A bee that is full of honey is not apt to sting, unless hurt. They have an instinctive dread of fire. When the smoke is blown among them they seem to think, 'Our house is on fire and will be burned up, honey and all, and we be turned out to hunt up another. We must save all we can,' so each bee runs to where there is some honey and fills its honey-sac, and thus becomes good-natured. If you close a hive and drum on it, the same result takes place. The bees think from the noise, 'Our home is being pulled to pieces; we shall surely be robbed;' and so each bee loads up, saying, 'We shall at least save all we can carry.' As you have been reading Langstroth's book, and hence know something about his hive, I think you had best adopt it. When in town one day last summer I saw Mr. Woods, a carpenter, making Langstroth hives for sale, and I think the best plan would be to buy some hives of him. When Tommy is older I think he might make his own hives; but I do not think he could at present. As you have only the one hive to provide for, we need not buy any thing for next summer until spring, and we see

THE FIRM OF JANE MEEK & BROTHER.

A Serial Story in Ten Chapters.

BY REV. W. D. RALSTON.

CHAPTER III.

FAMILY TALKS ON BEES, CONTINUED.

ANOTHER day at dinner, Mr. Meek said: "If your bees live until spring, and then swarm, hives will be needed in which to hive your swarms. It is now an important question to decide what kind of a hive you will adopt. Bee-keepers tell me it is a great advantage to have all the hives in an apiary of exactly the same size and pattern, and to use on all the same kind of fixtures for obtaining honey. It is very annoying to the keeper of a large apiary to have a great variety of hives and fixtures. I would merely say, that now, as you are making a beginning, be sure you make a right beginning."

Jane replied, "The great difficulty I see is, the firm has no money with which to purchase hives, and therefore I think we shall be compelled to hunt up old boxes and kegs for hives, as Mr. Brown does. As I have been reading about bees, I have learned about several things we shall need, and I have been wondering how we shall obtain money to buy them."

"I know very well," said her father, "you can not buy without money; but if you and Tommy keep up your interest in your apiary, I will lend you what money you need, and will wait on you until you have honey to sell. I will do so, not because I approve of going in debt, but because I desire the firm to start in business right, and I see you can not do that without some money. Therefore I will lend you money to buy whatever I feel will be needed. Now let us decide what kind of a hive we shall use."

Tommy then gave his views. "I did think we could use nail-kegs for hives. I think we can get them for nothing. Then I thought we would call our apiary the 'Nail-Keg Apiary'; but lately I have

that our bees are all right. Have you any more questions to ask me?"

Jane replied, "Please tell us something about comb foundation. I have been reading about it in the magazines, but I do not understand exactly what it is."

Mr. Meek then gave a description of comb foundation. He said, "Wax is not something bees gather, but it is something manufactured in their bodies. It is much more costly than honey. It is thought that a colony may eat twenty pounds of honey to secure one pound of wax. Bee-men tried many ways to enable bees to use a second time the wax they had once made. The only way they could do this was by carefully preserving the old combs, and fitting them into frames. Even the small fragments were carefully fitted into frames. These the bees mended, making nice strong combs; but if these were once melted down into wax, the bees would not make any further use of that wax. At length comb foundation was invented, and by its use bees are led to accept old wax, and work it over. Comb foundation is made in this way: You take a nice smooth board, the size you want your sheets of foundation. Soak it full of water, then have a can of melted beeswax, into which dip this wet board, and a thin sheet of wax will adhere to the board, which, when cool, will slip off. In this way you obtain your thin sheets of wax. The commencements of the cells are then made on these sheets of wax, by machines invented for that purpose. Comb foundation, then, is merely wax sheets on which are the commencements of the cells. Bee-men think it pays to use foundation. The foundation used in the boxes must be very thin."

Tommy asked if it would be necessary to buy a machine and wax, and make this foundation. His father replied, "No, you can buy the foundation already made; and I advise you to buy some thin foundation for your honey-boxes; and, speaking of boxes, leads me to ask what kind of boxes you will use. This is an important matter. You know Mr. Brown obtains his surplus honey in all kinds of boxes. When he sells any honey he takes one or two of these large boxes to a store. Customers seldom want to buy at once as much honey as they contain, therefore the storekeeper cuts out chunks to suit them. This involves waste from the honey that leaks out, and makes such a muss in handling it that the storekeeper does not care to buy when Mr. Brown comes with another large box. It was thought, What an advantage it would be if surplus honey could be built in frames, like the combs in the lower story! hence the section box has been invented; that is, a box not all fastened together, but in sections. Suppose I take some lath and make six frames from it, say five by six inches in size. If they are neatly made, and of exactly the same size, they can be pressed together, with two end-boards, and will make a box that can easily be taken into six pieces. Now, if I could have each little frame filled with a comb of honey, they could be handled without any trouble. At present these little frames or section boxes are used by all bee-keepers who make a success of raising comb honey. These little frames do not cost much; and as they sell by weight with the honey, they do not really cost any thing. You must also purchase some little boxes or frames to hold these section boxes in place in the hives; and if you want straight nice combs in the little frames you will have to purchase strips of tin, call-

ed separators, to use between the sections. These section boxes are of different sizes. The most common sizes are those holding one and two pounds."

By talks such as these, the children were daily learning more and more about bee culture, besides what they learned from reading on the subject. But about this time their school opened for the winter term; and as they both attended, their minds were occupied about their studies and plays, and for a time bee culture did not receive so much attention from them. Still, they and their father frequently talked on the subject. When it became evident that winter had set in, Mr. Meek carried the hive into the cellar, and, placing it in a dark corner, inverted an empty barrel over it, so the light might not arouse them when Mrs. Meek or any of the family entered the cellar with a lamp. The cellar in winter was very dark and quite warm, being fitted for keeping vegetables. The bees could not suffer from cold, and it was hoped that all other conditions would prove favorable to their wintering successfully.

To be continued April 1.

CARNIOLANS: HOW THEY PLEASE OVER IN IRELAND.

A CROSS OF THESE BEES WITH BLACKS, NOT "CROSS."

FARLY in 1884 I ordered two Carniolan queens from Messrs. George Neighbour & Sons, of London, England, to be delivered about the end of May; but the first did not come to hand until June 19th. She was large, and of a mahogany-red color, and arrived in splendid condition. Her attendants were very much more numerous than I had ever seen with foreign queens, and there were only two dead bees in the box. Immediately on her arrival she was introduced to a strong stock (from which the former queen had just been removed), by caging her on one of the combs, and her bees were united to those in the hive. Next day she was released, and the day after she began to lay; but what struck me as very unusual was her remaining on the comb on which she had been caged for ten days after her release. I say this because I opened the hive daily, and always found her on the same comb, even after she had deposited an egg in every vacant cell on it, and I could not find any trace of eggs in any of the other combs, most of which had, in the meantime, become pretty well filled with honey. Becoming impatient at her want of attention to business, I took her by the wings and placed her on a comb at the end of the hive, after which her conduct was every thing that could be desired. As the honey-flow was over for the season before the Carniolan bees were out, I could not speak of them as honey-gatherers; but the queen bred rapidly, and the stock went into winter quarters very strong in bees.

The second queen did not arrive for several days after the first one; and when she did come I was not so well pleased with her. Although she was very large, and light in color, she was out of condition. I got her safely introduced to a strong stock, in which she did very well for a time; but about a month after her introduction I was standing in front of her hive when I saw her crawl out and fall to the ground in a dying state. I opened the hive and found numerous queen-cells, from one of

which a queen hatched in due course. She was one of the smallest and darkest queens I ever saw, but she proved to be very prolific. I saw her all right when packing the stock for winter; but she disappeared mysteriously, and the hive was queenless when I looked at it the following spring.

The first stock came out of winter quarters in very fine condition, and thrived amazingly. I moved it into a twenty-frame hive (the largest I had), but I could not get the bees to work in sections, whether placed in the body of the hive or over the frames, so I put a second story on the hive, with excluder lying between, for extracting, and the rate at which those bees brought in honey was simply astonishing. About the end of June, 1885, a swarm issued from this stock; but the bees, after clustering, returned without the old queen. I fancy she must have fallen to the ground and got lost, for I never saw her again.

My opinion of the Carniolans is, that they are the best bees we have. The queens are conspicuous, the bees are gentle, and good honey-gatherers, and they are very hardy. I think them quite as handsome as the Italians, Cyprians, or Syrians, none of which are good honey-gatherers in this country. To show the industry of the Carniolans, I may mention that I sometimes feed my stock by placing a supply of syrup outdoors at some little distance from the hives. The Carniolans are the first to find it out, and have every drop taken away before the blacks begin flying for the day.

Although the Carniolans do not stay on the combs as well as the Italians, they are much more easily handled than the blacks. The crosses, first, second, and third, with blacks, are almost as gentle as the full bloods, which is a consideration when introducing new blood into an apiary. I intend to get half a dozen queens next season; and if you will allow me, I shall write to you again to let you know how they go on. I think Carniolans would be more generally kept but for the difficulty in getting queens early in the season. Last year, for instance, I ordered some queens, to be delivered in May, but I could not hear any thing about them until August, when I was advised that *one* had arrived.

Dublin, Ireland.

ROBERT SPROULE.

We are very glad indeed, friend S., to get so good a report from the Carniolans, and shall be quite glad to hear from you again on the subject. They will have a careful test in our own apiary this coming season, nothing preventing.

KIND WORDS.

SOMETHING TO THE CREDIT SIDE OF HUMANITY.

ONCE before remarked, that it was not altogether people who are owing you that won't write letters, for very often we find those who have a *credit* on our books neglect to answer. Once a year we go over the credits and send statements. When a man does not reply after we have sent him one statement, asking him if his credit is correct, we write to his postmaster to see if he has moved away, or is dead, or something of that sort. A great many times it turns out that he meant to answer all the while, but kept putting it off. Now, we don't care how long money is left in our hands—in fact, we always prefer to pay in-

terest where the sum amounts to any thing; but we like to know that it is all right, and that the rightful owner may clearly understand that he can have it any time he wants it. Well, the friend who writes below happened to be the postmaster himself, and here is his reply:

My Dear Mr. Root:—Your letter of the first inst. was received, and in reply I would say I have been postmaster so long I almost forget the time when I was not. Your other two letters were received. The reason I did not answer them was on account of my wanting again, some time, some more of your stock. It gives me pleasure to think there is one man in this whole United States who is anxious to do as he would like to be done by. You will hear from me again in the future. With many thanks I remain yours.

G. W. GILLITS.

Ellington, Ia., Feb. 4, 1886.

Is it not worth while to get such a letter as the above?

HOUSE-APIARIES.

RECONSIDERED BY W. F. CLARKE.

A TALL our conventions much useful information is gained by conversation with that quiet class of bee-keepers who have never outgrown the habit of modest childhood, but still make it a rule to speak only when they are spoken to. In fact, the lobby meetings are often more interesting and instructive than the public ones. The recent Detroit Convention furnished many illustrations of the truth of these remarks. Among the topics much discussed "between-whiles" was that of house-apiaries. The stillest man in the convention was perhaps the most talkative on this theme *out of* it. I refer to Mr. J. Vandervoort, who has become a thorough believer in house apiaries, and could "a tale unfold" in regard to them that would interest the dullest convention ever assembled. But, unfortunately, Mr. Vandervoort is no talker in public, though he is one of the best I ever listened to in private. He is a good writer, however; and if he would write out his views and experiences on house-apiaries he would confer a great benefit on the bee-keeping public.

The house-apiary is not a new idea, by any means, but one that has been tried in various forms for more than a century past. Most of those who have tried it for a time have abandoned it because of some objection or difficulty which might, with patient thought, have been obviated. From the window at which I am writing I have a full view of a pretty little house-apiary which I built more than twenty years ago, and abandoned after a single year's trial of it. I found it objectionable, because the house appeared to be practically one hive; and if a single colony became excited, all the neighbors joined in the row; also because the entrances, being exactly alike, young queens were apt to enter the wrong hive when returning from their wedding-tour. Another difficulty was, that the place became unbearably hot when the blazing beams of the summer sun shone remorselessly down upon it. But these objections, as may be readily perceived, are by no means insuperable ones.

New reasons having presented themselves to my mind of late for thinking it desirable that hives

should be housed, I have been studying the subject very carefully, and was in a position to appreciate Mr. Vandervoort's views as expressed in conversation at Detroit. The more I investigate and reflect on the matter, the more persuaded I feel that the next great step in advance to be taken in practical bee-keeping is the construction of houses which shall be permanent homes for the honey-bees during both winter and summer, and then good-by to three fourths of the worry and trouble now connected with putting hives into winter quarters and taking them out again.

I have been reading the A B C article on house-apiaries; and, really, the arguments in their favor therein adduced are so numerous and cogent that I wonder they have not commanded more attention from bee-keepers. But, if my memory does not mislead me, these arguments have been, to a great extent, nullified by unfavorable opinions expressed in GLEANINGS since the A B C book was published. I think, too, the great objection urged in GLEANINGS as fatal to the idea of house-apiaries was, that multitudes of bees would get into the house and could not be gotten out of it back into their respective hives again. If so, this is a notable example of a difficulty which requires only a little thought, and a very simple device, in order to its removal. Have the house totally dark, with the exception of a little door just above the hive being operated upon. Bees always fly for the light; and there being none except what is admitted by the aperture close to their own hive, they will quickly go outside the hive, and hover about the entrance to their own particular hive until quietness is restored, when they will at once betake themselves to their own domicile.

Mr. Editor, if you will kindly republish, along with this article, a couple of cuts and a communication which appeared in GLEANINGS for May, 1882, it will obviate the necessity for my saying more at this time. The cuts and remarks give a complete description of "Oliver Foster's house-apairy," which is the simplest, cheapest, and most practical thing of the kind with which I have met. I think, too, it is almost a fac-simile of the house-apairy now used by Mr. Vandervoort, and of which he speaks in the warmest terms of commendation.

By the way, Mr. Editor, you said in your foot-note to Mr. Foster's communication, "I feel very much inclined to make just such a house-apairy now, and I rather think I shall like it." Did you do so? and if you did, with what results? Your experience, if you have had any in the actual working of that plan, would be opportune and valuable just at this juncture, when many of us are revolving the matter in our minds, and meditating the erection of a house apairy of some kind when spring comes.

Guelph, Ont., Feb. 5, 1886. WM. F. CLARKE.

Friend C., there are certainly many very good reasons why house-apiaries should not be abandoned. I, too, had a long talk with friend Vandervoort in regard to his house-apiaries, and the way in which he succeeds in getting large crops of honey from them. When we returned from New Orleans we rode a long distance with him, and discussed the matter pretty thoroughly. I tried to take down some figures in regard to his large yields, but didn't get them. If I am correct, he promised to write the matter up for us, but I think he has never done so,

You propose to obviate my great objection by having the house totally dark, with the exception of a little door above the hive being operated upon. This necessitates a little door that will open and shut over every hive in the house-apairy—an item of no small expense, you will notice. The next question is, "Will it do the work when you get it done?" Coe's house-apairy, you may remember, was guaranteed to do this very thing. I rode forty miles on purpose to see it, and to see him do this little trick with several others. The house was darkened completely: the little door was opened, and it was near the floor too, so as to give the bees every chance to fly or crawl out. At my suggestion, some bees were shaken off on to the floor, at a little distance from this door. Did they go for the daylight at once, and all get off from the floor? Not at all. They did just as I expected they would—they went out when they got ready. But we had to go out of the building, and come back after a while, before they went back. If I mistake not, some of the young bees didn't go back, even then. I have tried all of these things thoroughly; and it is so much more bother and trouble, compared with hives outdoors, that no one I have ever seen yet likes house-apiaries, unless it is for raising comb honey. Keeping the floor clean is one great obstacle with us; and if I were to build another, there should be no floor—just the ground as it is outdoors; then if a bee is stepped on and mashed, you have not got to scrub to make things look decent again. So far as securing the honey is concerned, I believe I could get more honey in the house-apairy than in hives outdoors. In regard to the intolerable heat, somebody suggested making a house apairy like a corn-crib so that it would have nearly as much circulation as all outdoors. The man who made it, however, afterward reported that it didn't answer at all. Since wire cloth is so cheap, it might be a little better inducement. If you make it bee-proof, however, you are going to have trouble with the bees inside, that can not get out as before; and if you don't make it bee-proof, you must look out for robbers as you would if every thing were outdoors. Friend Vandervoort, I believe, raises his queens in the hives outdoors, and arranges every thing expressly for the production of comb honey. Before reproducing the article from Oliver Foster, we should like to have him tell us how it answers by this time.

SALT, A NECESSARY ELEMENT FOR BEES.

SALT FOR BEES; AN EXPLANATION OF THE REASON WHY BEES GATHER MUD OR DRY EARTH.

AS I have often observed, and studied for several years the phenomenon described by John W. Niman, pages 9 and 10, 1886, I will give what light I have on the subject. I have, with one exception, always found bees sucking clay, as described, either in roads, barn-yards, and other places containing the excrement of animals, or the drainage therefrom, and hence I soon concluded that it was some constituent of this

that they were seeking; but exactly what that was, I did not know. Happily, about two years ago an accident enabled me, as I think, to solve this. It became necessary for me to move my meat-house from where it had stood for about 30 years, and thus I exposed a little plot of ground that was filled with salt. My bees immediately took to it, as I had seen them in the above-described places. I saw that their reason for preferring the ridges and points was that, being more exposed, the evaporation was greatest there, and hence there was more salt deposited, or its solution made stronger. Now, as salt is the only thing likely to be found in all such places, and to fill all the requirements of the facts, I think salt is the element the bees were carrying to their hives; and with your permission, I will compound a new word for bee-keepers, and call such places "bee-licks." Further, I want to call the attention of bee-keepers, and emphasize the remark of friend Niman, in regard to what the bees were carrying in, "The want of it may be the cause of disease."

W. H. GREER.

Paris, Tenn., Jan. 18, 1886.

Friend G., I shouldn't be surprised if you had hit the secret of this strange conduct of the bees. Further investigation, however, will be necessary to decide the matter. The fondness that bees many times exhibit for salt has been several times gone over in our past volumes. Of late, I notice that the poultry-journals are deciding that poultry must have salt in small quantities, or they will pluck out each other's feathers, etc. Now, let us see to it that our bees have a bee-lick near the apiary, where they can at all times help themselves. A glass jar of salt water over one of the grooved boards we advertise will, I think, be about the right thing. May be some sawdust around the jar would please them better, for I have seen them fairly burrow in sawdust where salt brine had been poured out on it.

HUMBUGS AND SWINDLES PERTAINING TO BEE CULTURE.

We're perfectly solicit the aid of our friends in conducting this department, and would consider it a favor to have them send us all circulars that have a deceptive appearance. The greatest care will be at all times maintained to prevent injustice being done any on'.

THE GOLDEN BEE-HIVE.

A FEW days ago I saw an agent of the Golden bee-hive. He argued in favor of the Golden, while I was in favor of the Simplicity hives. At this time I use neither of the kind mentioned. The agent said to me that A. I. Root had abandoned the Simplicity, and was using the Golden exclusively. He attempted to produce a paper to that effect, but afterward said he did not have it with him, but would show it to me at another time. I concluded to write and hear from you at once, before I saw him again, to know if such be the fact.

F. A. PARSONS.

Oconee, Wash. Co., Ga., Feb. 10, 1886.

Friend P., the patent-right man is trying to come the old trick over you. I have never seen a Golden bee-hive in my life, but we have published the agents as humbugs and swindlers for years past. We use the

Simplicity hive for a summer hive entirely, just as we have done for the past thirteen years. The chaff hive is the same thing exactly, inside, and takes the same frame. It is better protected from winter's frosts and summer's heat.

THE BOHEMIAN-OAT SWINDLE, AND THE WAY THE AUTHORITIES ARE BEGINNING TO HANDLE IT.

The following we clip from the *Medina Democrat*:

A Bohemian-oats trial was recently held in Ohio, where a man sued some parties who sold Bohemian oats. He brought suit to recover the money, and won the case. He received damages in the sum of \$200, and interest on the same for one year. Good decision.

We extract the following from the *Cincinnati Commercial Gazette*:

WEST SONORA, O., January 28.—A new bait in the Bohemian oats is some kind of new-fangled wheat, and it is sold at the same modest price of ten dollars per bushel, the farmer receiving a contract that his entire crop will be purchased from him in one year at \$7.50 per bushel. Few persons have any conception of the gigantic extent of the Bohemian-oats swindle in Preble County. About \$75,000 worth of notes have been given by Preble County farmers for the Bohemian oats. Most of the purchasers knew that the venture was risky, and a good deal in the nature of a swindle, but many thought the bubble would not burst for two or three years, or else they could bulldoze their money out of the agents without much difficulty. So in they went, and now they are rushing frantically around trying to get a small per cent of their money back.

It behoves us as citizens of Ohio to try to clear off this slur from the reputation of our State, for it seems that this swindle was first inaugurated here. It seems to me that notices like the above ought to be sufficient to wind up the Bohemian oats, not only in Ohio, but in every other State.

THE RASPBERRY.

FURTHER FACTS, CONCLUDED FROM PAGE 608.

SOIL.

A DEEP rich upland clay loam is preferable, but the raspberry can be grown successfully on about any soil that is worth planting to corn, and the number of bushels of Gregg raspberries which can be grown on a piece of land will compare favorably with the number of bushels of corn that could be obtained from the same land. In the spring of 1881 we set 500 Gregg plants on a piece of rather thin gravelly land which had been in corn the previous season; and without applying any fertilizers to either the corn or raspberry-plants we have gathered four crops of berries, and have a growth of canes for next year which ought to yield at the rate of thirty or forty bushels per acre.

PREPARATION OF LAND.

The land should be plowed and harrowed as for potatoes or corn, and then "run out" three or four inches deep, in rows six or seven feet apart; or it may be "run out" in rows three or three and a half feet apart, and potatoes, sweet corn, or something of that sort, planted in alternate rows, with the berry-plants the first year. During the first year, and especially at the time of planting, six feet seems like entirely too much room between the rows; but the man who puts the rows much closer will be pretty sure to regret it in two years. The plants should be set about three feet apart in the rows.

CULTIVATION.

The cultivation which the raspberry should have is not different, especially during the first year, from what corn ought to have; and the implements commonly used in corn culture, with possibly the exception of those plows which work both sides of a row at once, are suitable for the raspberry-patch. We have not used any thing but the hoe and the common double shovel plow—going over the plantation once with the former, and about three times with the latter each year. In the first year it may be necessary to use the cultivator as late as August, but after the first year we have not cultivated later than the latter part of June. While deep cultivation close to the plants will doubtless be injurious by destroying and mutilating many of the roots, we feel sure that moderately deep cultivation at a little distance from the plants has not injured our plantation.

PRUNING BLACK CAPS.

When the young plant is set in autumn or early spring, it has no top except a few inches of the old cane from which it was propagated; but in due time it will send up one or more young shoots; and when these have attained a height of from 12 to 18 inches we pinch out the tops. This pinching out of the tops stops the upward growth, and causes the plant to throw out several laterals; and in the following March these laterals are cut back to from 10 to 20 inches in length. This pinching-out of the tops in summer (about the first of June), and cutting back of the laterals the next spring together, after the first year, with the cutting-out of the worn-out dead canes, which may be removed either directly after the fruit has been gathered from them, or at the time of the regular pruning the next spring, is the amount of pruning required to keep the plantation in nice order. A child ten years old can pinch out the tops in summer, and a girl of twelve years did the work of cutting back the laterals on one acre last spring. I think a good active man can cut back the laterals, cut out the old dead canes, carry out and burn the rubbish of an acre, in about three days.

GATHERING THE FRUIT.

Berries should not be picked when wet with dew or rain. They should be picked without being mashed, and put into quart baskets as picked, and the baskets should be free from unripe or imperfect berries and leaves; they should contain nothing but dry, ripe clean fruit. In the summer of 1885 we had one girl who could, under favorable circumstances, pick 100 qts. in a day; but her best average for a week was 62 qts. The price of picking is one and a half to two cents per qt., the pickers boarding themselves. In this section of country the selling price of berries during the past season ranged from 15 cts. to 6½ cts. per qt. The bulk of the crop sold at much nearer the latter than the former.

YIELD OF HONEY.

I don't know how much honey the bees can get from an acre of Gregg raspberries, but I know that for ten or more days, about the last of May and first of June, they just swarm over the raspberry-patch from early in the morning till late in the evening. The Gregg raspberry blooms with the locust, and the honey gathered from these two sources is a superior article, both in color and in flavor; and some that I extracted June 7, 1881, has not yet candied.

I live in a farming community, at a considerable distance from the railroad, and from large towns. No one about here thought of buying berries, or of growing them for sale, and I supposed that I should have to evaporate mine and send them to market that way. Now for the result. Last summer we sold about 100 bushels to persons who came to the yard after them, and some days it took nearly half of my time to explain to would-be customers that it was impossible to let them have berries. Some of the men near Steubenville pick and sell about 100 bushels a day.

In conclusion, I wish to say that it will not pay to write to me about plants. I have none to sell.

E. Springfield, O., Jan. 26. R. M. REYNOLDS.

Why, friend R., you almost take our breath away. As many bushels of raspberries to the acre as farmers get bushels of corn, and the raspberries are worth about three or four dollars a bushel, while the corn is worth thirty or forty cents! The trouble is, however, that men who raise corn, for some reason or other could not or would not raise raspberries. I am astonished again to know that you found a home market for 100 bushels of raspberries. This is a good deal like establishing a home market for comb honey in many places. The facts you give us are very valuable indeed; but it still seems to me that ground that will grow corn will not always grow raspberries. Raspberry culture has been tried a number of times in our vicinity, but they always grow up to weeds after a little while, and things get back in the old channel. One thing I can tell you, however, the Gregg raspberries on *our* honey-farm are not going to grow up to weeds. If you have not any plants to sell, and more customers for your berries than you can possibly supply, the most uncharitable of our readers won't think you are an interested party in giving us these facts. Another thing, this business of berry culture furnishes so much employment for the boys and girls. A girl or boy who earns money, and buys what he needs with the money thus earned, is smarter and brighter, and ahead in every respect, of those who live along some way without employment. Now, then, for the berries and honey. Who will have a berry-patch this very spring?

SOME OF A BEGINNER'S EXPERIENCE.

SEPARATORS OR NO SEPARATORS.

I HAVE had a few swarms of bees for twenty years, in different kinds of hives, with but little knowledge of how to manage them. About one year ago I thought I would try to see what

I could learn about keeping bees. Mrs. Lizzie Cotton's circular came to hand about this time. I sent for her book on bee-keeping. I had a hive made according to her plan, but I did not like it. Next was Qniuby's book on bee-keeping, which was very good, but I did not fancy his hive. I next saw your advertisement, I think in the *American Agriculturist*. I sent for a catalogue, then the A B C, and then for GLEANINGS. I believe I struck the right track. I ordered from A. I. Root 10 chaff and 10 Simplicity hives, and went to work with a will. I had six colonies in different kinds of hives.

In the spring of 1885, as soon as the weather was warm enough I commenced to transfer. I transferred them into Simplicity hives. About the middle of June they commenced swarming, and each hive sent out three swarms. I hived them all but one. The fountain pump I ordered of you is "just splendid." I could drive them in any direction by throwing a spray into their front ranks. The one that left was a third swarm, and with all the water thrown on them they did not stop. They did not even stop to cluster. The new swarms in new hives worked well, and I think I have learned something, but still I feel that I am a dull scholar, for I did not put any starters in my nice metal-cornered frames, and before I was aware of it the bees had built them crooked, and joined them so I could not lift them out of some of the hives. One of the first swarms sent out a swarm. One made 30 lbs. of honey in 1-lb. sections; two others made about 10 lbs. each. This surplus honey was all made in crates in chaff hives. For a number of years, honey has been exhibited at our county fair, so I thought I would show our shipping-crate filled with 1-lb. sections. Each section was filled out, all propolis was scraped off the sections, and placed in the crate. Having had separators between them when they were filled, they were straight, and all the sections looked alike. Each section could be lifted out with ease. I placed the crate on the table near two other lots of honey that had been left there for the premium. The other two lots were in a rough box with glass in one side, all nailed up, but one could see the 1-lb. sections through the glass—the same kind of sections mine were—and as nice-looking honey as mine, but they did not use separators between the sections, and consequently they were irregular, with some broken honey-comb. Mine was taken out, section after section, and turned over and over, and no sign of any breakage. I was in the hall but a very little while, but I told those in charge to let every one examine it all they wished to. One man asked me if that honey was for sale. I told him he could have it, and another and another. The other two lots were carried home. I wanted to take mine home, but it was too good to keep.

The most difficult problem I find in bee keeping is how to make bees store surplus honey in boxes. Last summer I had one swarm which sent out three swarms, and stored 15 lbs. of surplus in boxes, while others, just as strong, stored no honey in surplus-boxes.

L. N. CHAPMAN.

River Falls, Wis., Jan. 12, 1886.

HOW TO PUT UP AND SHIP BEES BY THE POUND.

OLIVER FOSTER'S METHOD.

AS it has been requested in GLEANINGS, I will give a description of my method of putting up and shipping bees by the pound, with some "reasons why." In his foot-notes on page 66, the editor says: "But we wanted to know how Mr. Foster puts up bees without any brood or comb," etc.

By referring to my circular you will see that I do not sell bees that way; nor can I see any advantage, either to shipper or buyer, in depriving the little fellows of their cherished young during shipment; but there are some grave disadvantages to all con-

cerned. In early spring, when most shipments are made, every good queen (and we would have no others), will keep her hive supplied with all the brood that her bees can possibly cover and provide for. Now take a pound or more of bees without brood, from such a colony, and the result will be more or less of chilled or half-starved brood, which means a filthy mass for the remaining bees to remove, or dwarfed and feeble bees for the next customer.

If the brood is divided between the other colonies, this only divides the difficulty and makes extra work. As for the bees confined for shipment, we do not claim that they really mourn the loss of their little ones as animals of a higher order do, but every experienced bee-keeper has noticed the salutary influence that the presence of brood, especially unsealed brood, has over a colony in almost any condition.

This influence shows its power for good when "the little busy bee," born peculiarly for liberty, is consciously imprisoned in a shipping-box. It is also very important, when the bees are liberated in their new home, to have some of their brood with them, as, after a long journey, they may abscond without it. Also if the colony is obliged to begin at the "foot of the ladder," without brood, instead of increasing from the first they must naturally decrease in numbers until their brood hatches, which will be at least three weeks. The dealer should make it to the buyer's interest to get some brood with his bees.

As for stores for shipping-cages, I claim that sealed clover or basswood honey is the *cheapest, safest, and best* food for bees in summer or winter, in freedom or in confinement; and the lightest and most perfect receptacle for these stores is the comb in which it was originally stored. Sufficient stores are usually found in the combs containing the brood to supply bees and brood during their trip. If not, a small block of sealed honey is placed on edge against the side of the box on one lower corner, and the comb is then pressed tight against it and fastened. If there is too much honey, part should be extracted, to save express charges. Before describing my shipping-box, we will notice one more point.

We have all seen bees worrying on the inside of a window. Their instinct seems to tell them, in a general way, that they can go wherever they can see, so they will worry themselves to death in a few hours, trying to fly through a pane of glass. If we lean a board against the outside of the window they will not try to get through opposite the board. If the window is of wire cloth instead of glass, and if the room in which they are confined is only a shipping-box, the delusion is much the same, and it is *worry* that kills most bees in shipping. I know there is a vast difference in bees as well as in persons about worrying; but the best way to get along with either is to always "stroke the right way of the fur."

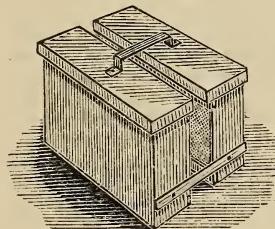
HOW MY SHIPPING-BOXES ARE MADE.

My shipping-boxes are all made of thin lumber, mostly 5-16 inch thick. For colonies of 5 or 6 lbs. of bees I use boxes about the size of the Simplicity hive. Wire cloth is tacked over the bottom, and a movable wire-cloth cover slips over the top, trunklid fashion. The covers are fastened down by two pieces of hoop iron, one at each end passing across from cover to box, and fastened to each with screws. These covers are provided with strong handles by

which the whole box can be easily handled with one hand.

To raise the bottom off the floor, and to protect the wire from being broken, a cleat, one inch square, is nailed across each end over the wire, and a thin bottom is nailed to these cleats, which leaves a one-inch space below the wire, open at each side. For smaller colonies I use boxes like the above, but only half as wide. These will do for 5 lbs. of bees, if only one or two combs of brood are put in. To hold the combs in place, I use spacing-sticks $\frac{1}{2}$ inch square and 8 inches long. A one-inch wire nail is driven through, $\frac{1}{8}$ inch from one end, so that the point projects $\frac{1}{4}$ inch. These sticks are placed between the ends of the frames, so that the point of the nail rests on the top of one frame, and the head on the other. When the sticks are in place, the frames are crowded together, and the outside one is fastened with wire nails.

Most of my orders are for packages of one pound of bees, one or two combs of brood and a queen.



OLIVER FOSTER'S SHIPPING CASE.

To fasten the boxes together, a piece of strap iron is placed across, from box to box, at each end near the bottom, and bolted to the boxes, leaving a two-inch space between the boxes. A hoop-iron handle is then fastened across the top, being bolted at the ends to the middle of each cover. This also holds the boxes in place at the top. These bolts are $3\frac{1}{16} \times 1$ inch, with a round slotted head, and they are fastened permanently in the covers and end-boards with the heads inside. To keep the bolts from turning, I drive a one-inch wire nail part way in, near the end of the slot, then bend it over into the slot, and clinch the point on the other side. As the nuts turn easily with the fingers, the boxes can be taken apart and put together quickly without tools. Bees will ship safely in these if properly put up. Most of my boxes have been returned to me free by express. Our agent recently referred the question to the Supt. of the American Express Co. His reply was, that bee-boxes do not come under the head of "empties," to be returned free. If bee-dealers would adopt a standard shipping-box, something light, strong, and handy, as mine are, I think the express companies could be persuaded to return them free, as they do other empties.

10—OLIVER FOSTER, 250—296.

Mt. Vernon, Iowa, Jan. 25, 1883.

Friend Foster, your points in favor of a comb of brood, instead of sending a pound of bees without any brood or combs, are well taken, and I grant every one of them. But, may I say there is something to be said on the other side? And as this is a very important matter indeed, I hope I shall be excused for going over ground that has been several times gone over already. Your comb of brood is worth a good deal to you;

and if you send it, you have to get your pay some way. Perhaps I should add, that we do not have brood die for want of bees to cover it. We always have more or less colonies having many bees and little or no brood. This comes from selling off queens, and waiting for new ones to lay, so there is hardly ever a time in our apiary when we can not place a frame of brood of any age where it will prove a blessing to the bees that receive it, and not an egg nor larva will be lost. Now, we find those blocks filled with Good candy very much cheaper, and easier to handle, than a frame of brood. Second, a great many of our purchasers don't want a frame of our combs, because the frames will not fit their hives. A large part of our trade, for instance, is with those who have lost their bees in wintering. They have empty hives and empty combs. They want queens and bees, but they don't want our kind of frame nor our combs. Another thing, a great many bee-keepers have a choice queen, with so small a cluster of bees in the spring, that, if she pulls through, she will be little if any profit; whereas a pound of young Italians, or even half a pound, would set her right on her feet, so to speak. Some hatching brood might do very well, but she is already able to furnish more eggs ten times than her bees can possibly take care of. In such a case, only bees are wanted. If bee-keepers could be made to come down to a standard frame, so that the frames used by one party would be sure to fit nicely the hive used by another party, it would be a grand thing, and right in line with your plan. We also furnish brood-combs where wanted and paid for, as you may recollect; and where we send as many as three or four pounds of bees, we prefer to furnish stores in a frame of comb with some brood. But I should say that nine out of ten of our orders are for one-half or a whole pound of bees without any brood, and, a great many times, without any queen. But while I think of it, I believe that bees without a queen always ship better if a little piece of brood is given them. Your suggestions in regard to covering the bees so that not much light strikes them, is a good one. I am anticipating a great deal of pleasure in shipping bees in a single section of Heddon's new hive.

REPORTS ENCOURAGING.

50 COLONIES, AND 2500 LBS. OF HONEY; THE RELATIVE GOOD POINTS OF BLACKS AND ITALIANS.

I THOUGHT I would send my report. I commenced this spring with 50 colonies; got 2500 lbs. of honey—500 extracted, and the rest comb. The extracted was all sold at home at from $12\frac{1}{2}$ to 15 cts. About half of the comb honey was sold at 17 to 23 cts. It will be five years next April since I commenced bee-keeping. I have had Italians with the black bees all this time, and I have been trying to find out which are the best. I have got my bees pretty well mixed, from pure Italian to black. I think the difference is not so much in the bees as what they get honey from. I think the black bees will get the most honey from raspberries. They

are about equal on white clover. The Italians are the best on basswood; the blacks are the best on buckwheat. The Italians are the best on thistles; they are about equal on goldenrod. This will show you how hard it is for me to decide, as basswood is from two to three miles away, and doesn't blossom every year. As to the handling, it will depend on what we work them for. You can get more honey from black bees in one day, than from the Italians.

Portville, N. Y. F. ROULO.

FROM 37 TO 74, AND \$20 IN MONEY.

In the spring of 1885 I purchased 37 colonies of black bees, in Quinby-frame hives. I increased to 74 by natural swarming, and worked them all for comb honey, in one to two lb. sections. I received from honey sales, \$230; for 22 swarms sold, \$90. I put 53 in cellar, Dec. 1; six were light and one uneasy, with bees dying. Jan. 10th I set them on a clean bottom-board, and they seem to be more quiet now. Cellar temperature ranges from 40 to 45°. I fixed the Heddon plan for preventing after-swarms, and it worked well with me.

Depeyster, N. Y., Feb. 14, 1886. FRED C. CLARK.

MY REPORT—A B C CLASS.

I started in the spring of 1884 with one colony of black bees; divided them, and for my trouble I received many stings and no honey. I packed them in forest-leaves, and they came through the severe winter in fine condition. I fed them about 20 lbs. of damaged sugar in the spring, to stimulate the queens, with fair success, I think, for a beginner, as I have taken 175 lbs. of fine comb honey. I increased from two to six colonies, all Italians. My honey pays all expenses, and I have my bees for profit, which I value at \$50.00. JOHN S. SCOVEN.

Kokomo, Ind.

A MILD WINTER.

Our bees are amusing themselves by robbing each other this warm weather. We have not had more than one day at a time when they did not fly out. We are having a very mild winter. We commenced this spring with 22, and increased to 60. We extracted 4004 lbs., and got 346 lbs. of comb honey.

Church Hill, Miss., Dec. 30, 1885. WM. BOLES.

FALSE STATEMENTS IN REGARD TO THE HONEY BUSINESS OF OUR COUNTRY.

As a protection to our bee-keeping population, we propose in this department to publish the names of newspapers that persist in publishing false statements in regard to the purity of honey which we as bee-keepers put on the market.

Thou shalt not bear false witness against thy neighbor.—Ex. 20:16.

WE are pleased to see the *Farm and Fireside* come out fairly and honestly and own up that the charges against bee-men and comb honey are false, as in the following:

Notwithstanding all the stories to the contrary that have been floating in the press, comb honey has never been counterfeited.

By the way, I am very glad to be able to say that the New York *Witness* published promptly the remonstrance which I sent them. As you may wish to have it copied in your own papers I give it below, as it appeared in the *Witness* of Jan. 28:

NO ADULTERATION IN HONEY.

To the Editors and Readers of the *Witness*:

May I ask space to say that no such thing as manufactured comb honey has yet appeared in the market of New York city, or any other market in the world? and so well am I satisfied that the whole thing is an utter impossibility, and ever will be, that I will willingly spend \$1000 in hunting up the establishment where such an article is made, if it be made anywhere. I choose to speak thus strongly because of the statements appearing in the *Witness* and other papers to the effect that our comb honey is spurious, some papers even going so far as to say that neither the comb itself nor its contents ever came from a bee-hive. Liquid honey may be adulterated, and no doubt is to some extent; but as the quality of honey gathered by the bees varies greatly, ranging from a grade of honey so poor that no one would want to eat it, all the way up to our finest clover and basswood and mountain-sage honey, it is nothing strange that the public denounce as spurious a good deal that may have been put on the market. Let us fight down frauds, and insist that goods be labeled truthfully and honestly; but let us be careful about declaring that comb honey and "hens' eggs" are manufactured by machinery. We bee-keepers will try to make due allowance for pleasure, and for the fondness of our American people for something new and wonderful; but please remember, dear friends, that what is fun for you is often death to us.

A. I. ROOT,

Editor of GLEANINGS IN BEE CULTURE.

Medina, O., Jan. 28, 1885.

Now, if any paper that has unwittingly given place to these sensational statements will give us a hearing by publishing the above, or any thing similar, of course nothing further is to be desired; and we can recommend the *Rural New-Yorker*, *Prairie Farmer*, *Farm and Fireside*, and the *Witness*. We shall be glad to give the names of all other papers that seem disposed to grant us a hearing.

The *A. B. J.* comes down heavily upon religious papers that have published these statements, damaging to our industry, and are slow to correct the mischief they have done. Friend Newman says they are breaking the ninth commandment, which was "thundered from Sinai"—"Thou shalt not bear false witness against thy neighbor." We are sorry to see that the *N. Y. Tribune* still sticks to the "fraud" part of the business. They copy the following, apparently by way of indorsement, from the *Central Baptist*:

Glucose adulterates our sugar, syrup, jellies, and preserves, and now it seems we have honey-comb filled with it. Some day the laws against adulteration of food will be explicit enough to reach these rascals.

Yes, dear friends of the *Tribune*, I do hope the laws will some day be explicit enough to reach such rascals, and the rascals as well who break the ninth commandment.

Later.—The following is just at hand, from Robert West, editor of the *Chicago Advance*, so we have one more paper to add to our list of those who are willing to give us a hearing:

A. I. Root, Esq., Dear Sir:—Your very kind letter came when I was too ill to reply to it. Your communication we gladly publish next week. Thanking you for the spirit of your criticisms, as well as for your letter, and assuring you that truth in the matter is what I seek, I am yours truly,

Chicago, Ill., Feb. 16, 1886. ROBERT WEST.

In conclusion, I am frank to admit that I have been greatly disposed to show a want of charity in this matter, and I hereby beg pardon for being hasty in regard to the *Advance* and *Witness*.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

TESTING EXTRACTED HONEY.

AN inquiry has been made by a friend, who uses honey as a medicine, and he wishes to test it pure. How can extracted honey be tested, to discover any adulteration that may have been made? Probably you would be pleased to notice this inquiry in GLEANINGS.

Elkhart, Ind., Feb. 11, 1886. J. S. COFFMAN.

Friend C., there is no way that can be laid down in books and journals for testing extracted honey, that I know of, that wouldn't be expensive and rather impracticable. You can test the presence of cheap glucose by sweetening a cup of tea with a teaspoonful of the honey. If it contains glucose, it will make the tea black. A few days ago some milk was left in a tin dish, from which the tin was worn off so as to expose the iron. As soon as the milk was poured into the tea, the mixture looked like ink. The tannin contained in the tea makes a delicate test for the presence of iron. If the quality of the glucose, however, were very good, there would be no trace of iron about it, so the test is by no means infallible. To get a chemist to test honey usually costs from five to ten dollars, and he may make a mistake, even then. I do not see any better way than to buy your honey of some reliable firm, or get it with the name of the producer on the package. Certainly not one bee-keeper in a thousand would put his name on a package of honey that was not pure. A good many samples of honey have been sent me since our late discussion in the matter, but I am quite certain that all that have been sent me have been absolutely pure honey, made by the bees, although some of it is very poor in quality.

YELLOW WASPS, AN ENEMY TO THE MOTH MILLER.

Last spring, as I had no place to keep the combs from the hives in which the bees died during the winter, I hung four or five in a hive, and placed five or six hives, one on top of the other, with a bottom-board between each hive. I had six such tiers. When I used them in June and July I found thousands of the wings and legs of the bee-miller under each hive, and but five or six moths in the whole lot of combs. A nest of very large yellow wasps, or hornets, had taken possession of one of the hives, and filled three of the combs nearly full of brood. They got so strong that I had to burn them. I think there was three pints of those big yellow fellows after I had got them killed. A strange part of this freak is, that in a short time after I had killed the ugly "varmen," what combs were left became so full of moth worms that I had to remove them to a safe place, and brimstone them. Now, what I should like to know is, did the wasps kill all these millers? If not, what did? At any rate, they spoiled three combs for me, as the bees would not clean the wasps' brood out of them. W.M. L. KING.

Sodus, Berrien Co., Mich.

Friend K., your remarks remind us of what L. L. Langstroth recently wrote in regard to spiders as a protector of empty combs. The yellow wasps, without doubt,

decided that the larvæ of the moth were just the thing to feed their young, and probably did a thriving business, as the quantity of brood you mention attests. You give us another strange fact; and that is, that these wasps will use combs built by bees. Why did you kill the wasps? Why not let the wasps' brood hatch out itself, and then your combs would have been as good as ever?

WHAT IS SPHAGNUM MOSS? AND SOMETHING ABOUT WHERE TO GET IT.

Please tell what sphagnum moss is. Is it the kind that grows on old logs, in low ground?

The Bend, Defiance Co., O. F. W. MOATS.

Why, friend M., it is the kind of moss you refer to, but I suppose any sort of moss would do for making seeds grow, on the plan given by Mr. Henderson. We get ours from a peat swamp that we underdrained last fall, for the privilege of drawing away as much peat as we wanted. We spade up the moss in great chunks as big as a man can lift. It is then dried over our steam-boiler, when it is rubbed through the hands until fine, and then sifted over the seeds. We have formerly got sphagnum from forests and from nurserymen in the cities; but the kind we get from our own swamp here at home works nicer than any we can purchase.

SOME WISE COUNSELS FROM CUBA.

I feel like thanking G. M. Doolittle for his article on page 13, "Few or many Colonies: which?" and I do not know that I should slight you for the remarks you make upon his article. If the beginners could be made to understand that success in bee-keeping does not so much depend upon the number of colonies as upon the amount of honey secured from a few colonies when the range is not overstocked, there would be more satisfaction and better-filled pocket-books. Let's have no more colonies than our range will support, and lots of bees in each colony.

A. W. OSBURN.

Havana, Cuba, Jan. 22, 1886.

MARKING A BEE WITH PAINT.

I see in your last issue that you suggest putting a drop of white paint on the back of bees to mark them, so as to see how long they would live after their sting has been removed. I would say, that oil of any kind, put on to a bee or other insect, will kill it in half a minute, as it gets into the breathing-pores and strangles it.

C. C. MILES.

Des Moines, Ia., Jan. 22, 1886.

So says theory, friend M., but the facts do not agree. A little bit of thick paint on the fur of the bee's body does not hurt him, as several have proved. One friend let the paint run through a crack in the roof of the hive while he was painting it, and, without trying to, he marked several of the bees; and, strange to say, the queen was among them.

HOW TO GET SPIDER-PLANT SEEDS TO GROW EVERY TIME.

It is natural for all wild-plant seeds to lie in the ground and freeze through the winter. We must follow nature if we want them to grow. You want to plant, or, rather, bury the seeds, in the winter. Take a small bag, put the seeds in it, and bury it in the ground one or two inches deep, where they will freeze during the winter; and after the ground is

done freezing in early spring, prepare a good rich bed, make it in rows one or two feet apart, then go to where you buried your seeds and take them up, and they will all be sprouted. Take them, and plant and cover with loose rich dirt, and every seed will be sure to grow with no more trouble, except to transplant when large enough.

Parrish, Ill., Dec. 14, 1885. MOLLIE DIXON.

We have sometimes thought that freezing the seed was an advantage; at any rate, we know that freezing does not hurt the seed, because the spider plant is a great plant to come up of its own accord wherever it is sown the season before. We now get any sort of plants to grow by simply sowing the seed, by the plan recommended in our issue for Jan. 15, page 62, for raising seeds for vegetable plants. We are going to try some spider plants this year over those reservoirs. Two or three feet of heavily manured soil, with water underneath it, ought to do something stupendous with the spider plant.

WHAT IS THE PROCESS OF PACKING PORK WITH HONEY?

Again I am notified my time has expired with the old year. You ask me if I have found GLEANINGS a good investment? I have, and I have learned more by reading it than any other paper I take—not only about bees, but about other matters in Home readings, "What to Do," etc. What you said about the convention gave me new ideas and some good advice. As using honey for packing pork is something new to me, please give your readers the process, or how to use it in packing pork, etc. My wife uses honey in place of sugar in making cake, etc. I for one like it; that is, when we have it. As to bees, I have only two hives. They are doing well thus far.

I. R. GREEN.

U nadilla, Otsego Co., N. Y., Dec. 28, 1885.

Friend G., I do not know the process of packing pork with honey, only that the honey is made to take the place of sugar and molasses. Perhaps the substitution of honey where sugar and molasses are called for in the recipes for making pork pickle is all that is required. Doubtless friend Muth can enlighten us.

IS IT POSSIBLE TO GET EVEN GOOD-LOOKING HONEY BY SUGAR FEEDING, AND AT A PRICE WHERE IT COULD COMPETE WITH REAL HONEY?

After reading Mrs. Harrison's revelation and Mrs. Wright's protest, I expected the editor would take up the gauntlet and hurl back such a volume of evidence as would prove, for all time to come, that sugar can not be fed to bees, and get it stored in sections, not even to get partly filled sections completed; but he didn't "rile," worth a cent. Now, why is this? Has some person demonstrated that it can be done, and we wish to keep the matter as quiet as possible, or are we all halting between two opinions? I have a notion to put (not before the house, as the house is too slow), but to the editors of all the bee-journals, and it is this: That they appoint an investigating committee, to be composed of a number of the prominent bee-keepers of the country, and request them to experiment and prove whether sugar can or can not be fed to bees, and have them build comb, and store it in the sections in paying quantities, or in any quantity. If such is the case, then the grumbliers have the long

end of the lever; but if it is impossible, and Mr. Wright is aware of the fact, he can easily convince those merchants that his honey is pure, by offering them a fair price for all the honey they can secure in that way. Even if honey can be procured by feeding, and it takes $1\frac{1}{2}$ lbs. of 8-cent sugar to produce 1 lb. of honey, he would yet be safe in offering to pay a fair price for a large quantity, if there is any way of detecting the difference. Now, if I am not mistaken we need more light on this subject.

Brock, Neb., Feb. 13, 1886. J. S. JOHNSTON.

Why, my good friend Johnston, we had the answer to this question on page 101, where friend Unterkircher fed back 3500 lbs., and it did not half pay expenses. Surely, feeding sugar wouldn't give any better results, would it?

BEE STING POISON AS A REMEDY FOR RHEUMATISM.

We take the following from the *British Bee Journal* of Jan. 21:

El Siglo Medico relates the following singular case, which may prove interesting to the bee-keeping world:

A woman had suffered so much from rheumatism that for six months she had hardly slept. Her right arm was so affected that it was quite useless; she could neither work with it, nor dress herself. While in this state she heard of a countryman who suffered in the same way, and who had been cured by the accidental sting of a bee. As the pain caused by the sting could not be worse than that due to the rheumatism she determined to try the same remedy. Three bees were obtained and made to sting her on the right arm. The success of the treatment was surprising and complete. On the following night she was able to sleep, and the acute pain had all but completely disappeared; the arm was naturally a good deal swollen, owing to the stings, but the swelling quickly disappeared with cold-water dressing. The use of the arm gradually returned, and since there have been no symptoms of rheumatism. It is reported that the same remedy has been equally successful in several other cases. The cure no doubt was caused by counter irritation, and the treatment is analogous in its action to blistering, and the like. Moral: Let all rheumatic persons keep Cyprian bees.

WHY NOT USE THE NATURAL GAS IN OUR FACTORY?

I have been thinking of the wonderful benefit the people of this county are receiving from gas. It has made me think of you in your business. Just listen to me (though time may be precious). Think of a gas-well, with the pipes turned into your furnaces, running your machinery; then with smaller pipes running through all your rooms and into the stoves, then down to the — where the "queen" lives, to warm up and light up the whole house, besides enough left for neighbors, etc.! Such a well we have in our county, also an abundance of oil. There are now 13 wells dug, all producing gas. One well throws, on an average, 100 barrels of oil a day; another throws 24 bbls. The 13th and last well is an enormous one, said to be strong enough to heat all Cleveland. The gas is found at about 1200 ft. in depth. The last well is now burning from a pipe stand of 57 ft., throwing a flame of from 50 to 70 ft. I suppose you have seen many accounts of it; don't you believe you, too, can find it in Medina by going down after it? Have you thought of it? It's worth thinking about. Or send Ernest here to start up a shop. Many manufacturers are looking this way. Just come and see for yourself. Before the last well was under control I took a broom-handle and tried to hold it over the six-inch escape-pipe (now remember I mean the broom-handle), and it would take it to this side and that with a "Zip, hiss, sizz,"

etc. You can imagine a little its great capacity. I am looking forward to the time I can control my cellar for the bees to a dead certainty. Over 4000 stoves in Findlay are being heated by gas this winter. The charges are \$12.00 a year for one stove; but the probability is, that it will be one-half less next winter. That is as cheap as wood, and you don't have to carry out ashes, and there is no muss. As I look out to the east, I now can see the great light 12 miles away. I should have said, perhaps, that while the gas escapes it makes a wonderful roaring—so much so, that a train of cars can't be heard when equally distant. S. H. BOLTON.

Benton Ridge, Hancock Co., O., Feb. 11, 1886.

Thanks for your suggestion, but Ernest has his hands full at the Home of the Honey-Bees. About the time father started in bee-keeping he had the natural-gas hobby too. He accordingly sunk a well, but he didn't even "strike it." Very recently one of our townsmen sunk a well to the depth of about 1200 ft., at a cost of as many dollars, but the attempt resulted in an entire failure as far as obtaining gas was concerned, or any thing else, for that matter. ERNEST.

TYPE-WRITERS—WHAT ONE TO BUY.

Referring to page 54, GLEANINGS, let me say, do not be fooled by the pretty writing of the Hall type-writer. The cost is \$40.00. I have used one—neat work, but hard slow work. I was in love with my Remington, but was induced to try the improved caligraph, and I will say that the improved caligraph has about twenty good points over the best Remington. The same man invented both, and controls his patents. Several of the departments in Washington are now using caligraphs.

D. H. KELTON, Captain 10th Infantry.

Cantonment on U'ncompahgre, Col., Jan. 28, 1886.

We are very glad indeed to get your opinion in this matter, Captain K., for we have known you for a good many years, and feel sure that your opinion is unbiased, and that you seek only the best good of bee-friends. Very likely the Hall type-writer might do good service where there was not a very large amount of business.

IS REVERSING OF FRAMES NECESSARY?

Some have said to me that they did not favor giving new swarms much brood. Why not? This is just what they make for themselves as soon as they can; and if left to themselves it will be three weeks before their number will be reinforced by young bees, during which time the force of working-bees is continually growing less. If it is desired to completely fill the brood-chamber with brood, as per the reversible-frame plan, alternate the frames of brood with fdn., when the combs are given to the new colony. If not so desired, place the brood in a body in the center of the hive, with fdn. at sides of hive. This latter plan, I am inclined to think, will prove more satisfactory in the end. This is on the ground that a shallow hive be used. I have one with 10 frames, regular L. size, but not so deep. I much prefer them to deeper frames, having cut down a lot of L. frames, and I would not change back again. I much prefer this method to the Heddon system for the prevention of after-swarms. And just now let me ask those who intend to use the Heddon system another season, to try this plan with a few colonies, and see for themselves if it

hasn't decided advantages. It also affords a good opportunity for those who wish to raise any number of "swarming-impulse" queens, which may be taken from the colony on the old stand. This method, or a similar one, was suggested by W. B. House about three years ago, in GLEANINGS, since which time I have heard nothing of it. I have given it several years' trial, and am well enough pleased with it to continue, and without the use of reversible frames. Now let us see if reversible frames are not generally discarded by those who now are foremost in advocating them.

C. W. KING.

Kibbies, Mich., Feb. 10, 1886.

MOTH WORMS THE CAUSE OF BAREHEADED BEES.

I want to corroborate the thought of C. C. Miller, in GLEANINGS for Jan. 15, in regard to "bare-headed" bees. I know, and am satisfied that it is caused by wax-worms. Several years ago I was worried by occasionally finding a comb with more or less bees uncapped, and was disposed to blame the queen; but accidentally I found a worm in the line of uncapped bees. Further investigation proved this to be the cause. I invariably found the worm. They invariably run in rows or circles, and the dead bees are generally fastened to the bottom of the cell by a web. I had to accept this theory as the cause. This last summer, noticing a row of uncapped bees in one of my combs, I said to myself, "Here is a worm;" and on digging out the row with my penknife, out comes the expected worm. This was the more noticeable to me from the fact that I had not seen a moth or worm since I came to this State, three years ago, and had come to the conclusion that bees were not bothered with them here; and in fact this is the only one I have seen. I have no doubt but you will find the worm, nine cases out of ten, upon investigation.

M. H. SNYDER.

Arkansas City, Kan., Jan. 23, 1886.

Friend S., I am quite familiar with uncap-ped brood caused by moth worms, and I find it exactly as you describe. The bare-headed bees I have described in the A B C book are quite a different matter indeed. The patch is not oblong, but a complete clus-ter of cells. The capping is not torn, as where moth worms have been at work, but the cells are carefully fixed up in regular order around the heads of these uncovered bees. See reports elsewhere.

"WHAT TO DO, AND HOW TO BE HAPPY WHILE DOING IT," HAS GONE DEEP AND TAKEN ROOT; REVERSIBLE FRAMES.

I was very much amused when I read the article of Dec. 15, "What to Do," etc. On page 861 it says, "Get some experienced farmer to tell you how much it would be safe to offer for old manure piles." Why, bless you, if you were out here you could get a train load for hauling it away. Your articles have gone down deep, and have taken root at Sunny Eden, a little farm of four acres. We do not think the cobble stone drains would work in this locality. Do you think a sandy clay will hold water? The subsoil is two feet deep here. I ex-pect to give your advice a practical test.

As we have not used reversible frames, we are in a dilemma as to whether they are an improvement or not. We should like to have this decided, as we wish to use only the best hive and frames. We do not want to make too rash a blunder by changing from this hive to that, just because some one ad-

vises it who has had long years of experience, but has not made a test of more than six months, or perhaps not that long, of the plan. W. S. DORMAN.

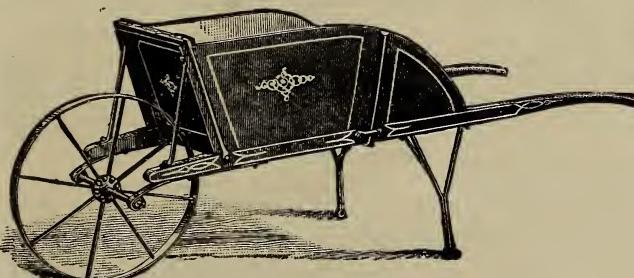
Mechanicsville, Iowa, Jan. 28, 1883.

Friend D., if you are where you can get good manure for drawing it away, and the distance is not great, you certainly ought to build up an immense business in market gardening. The cobble-stone drain, as you term it, will work in any soil where there is ever a surplus of water. Of course, the water will not stand as long in sandy or gravelly soil as it does in clay, but it would usually stand long enough to be a benefit to the growing crop.

ANOTHER WHEELBARROW FOR BEE-KEEPERS.

A WHEELBARROW FOR WOMEN, CHILDREN, AND PEOPLE WHO ARE NOT VERY STOUT.

WHEN I got our gas-pipe wheelbarrow I had been greatly disgusted by our wheelbarrows breaking down, rotting to pieces, and giving out when I didn't want them to. Well, the iron wheelbarrow remedies these defects. They will get rusty, it is true; but they never rot and never break, or rarely. On one occasion one fell from the top of our factory, loaded with brick, because of a rope breaking; but it was a pretty good wheelbarrow, even after it got to the bottom. There is only one trouble with it. Being all metal, it is necessarily pretty heavy. Sometimes when I go down across the creek for a wheelbarrow load of green corn, I conclude the wheelbarrow is heavy enough for me, without any load on it. Well, I have several times felt as if I should like to try my hand at making



OUR 35-POUND WHEELBARROW, CAPABLE OF CARRYING 500 POUNDS.

a wheelbarrow of our strongest wood and our best steel, properly braced and arranged so as to give strength, and yet not weigh one ounce more than is absolutely necessary. At the Ohio State Fair last year I found a wheelbarrow that came so near filling the bill that I asked the manufacturers how cheaply they could make 100. The wheelbarrow was all I could desire; but the price, I thought then, was more than we could stand. During the winter, however, they made a proposition which I considered very reasonable, providing they could make them at their convenience, when times were dull. Well, friends, the wheelbarrows are here, and they are a surprise to everybody. We show you a picture above.

We have two sizes -- the larger one weighing

only 35 lbs., and yet it will carry 500 lbs. safely, and it can be packed so closely together for shipment that you can take the whole thing under your arm and walk off easily. The wheel has flat spokes instead of round. The different pieces are all cut and forged by means of dies. The legs are steel, so they will neither break nor bend, even if you bump them on the sidewalk. The springs are oil-tempered, with adjustable bearings, so you can tighten them up for wear. More than all, the wheelbarrows are the nicest job of painting and varnishing, I believe, I ever saw, for a farm implement. They are handsome enough to go around town with, and strong enough to do heavy work; and yet the price of the small size is only \$4.00, the same as our iron wheelbarrow. The larger size is \$4.50. The only discount that can be made is 5 per cent off for two; 10 per cent off for five, or 15 per cent off for ten or more. They can be sent either by freight or express. It is only five minutes' work to put one together.

NOTICES OF PRICE LISTS RECEIVED.

A. H. Duff, Creighton, O., sends an 8-page list of bees and poultry.

B. D. Sidwell, Flushing, O., sends a price list of Plymouth Rock poultry.

F. J. Crowley, Batavia, N. Y., sends us his 12-page price list of bee-supplies.

W. S. Cauthen, Pleasant Hill, S. C., sends his 8-page list of bees and queens.

G. W. McCallip, Hiawatha, Kan., sends a 12-page circular of aparian supplies.

E. S. Brooks, Myrtleton, Oregon, sends a 13-page price list of supplies in general.

Henry Crue, of North Manchester, Ind., sends his 31 annual 10-page list of supplies in general.

F. A. Snell, Milledgeville, Ill., sends us a 15-page descriptive catalogue; specialty, the Eclipse bee-hive.

E. M. Hayhurst, of Kansas City, Mo., sends us his postal-card circular--a printed list of bees and queens as a specialty.

T. G. Newman & Son, of Chicago, send their 35-page price list of aparian supplies. Among the noticeable features of their list for '83, we notice the Heddon hive figured and illustrated.

Mrs. Lizzie E. Cotton, West Gorham, Me., sends out her annual circular of 32 pages. It is written in her usual bitter and censorious style, and breathes "threatening and slaughter" to the bee-journals and supply-dealers in general, which alone is enough to indicate that trouble may be expected by all who deal with her. We can only repeat our old stereotyped paragraph, which we always refer to when asked in regard to her standing. It reads thus; and probably always will:

I am being asked my opinion of the new circulars. Mrs. Cotton is again sending out quite plentifully. The statements she makes, and the prices she charges, are such that we do not doubt, in my opinion, forbid her being classed with our regular supply-dealers, to say nothing of the strings of complaints against her that have filled our bee-journals for years past.

John A. Thornton, Lima, Ill., sends a sheet concerning bee-supplies and Plymouth Rock poultry.

F. A. Salisbury, of Geddes, N. Y., sends a 30-page price list of aparian supplies; also containing much valuable information besides.

Chas. F. Muth & Son, of Cincinnati, send a 30-page catalogue of aparian supplies, besides a good deal of useful information. Among the interesting features, we notice their new all-metal smokers listed.

Among the circulars recently printed at this office we notice the following:

R. Schmidt, Caroline, Wis., a sheet of aparian supplies in general.

L. J. Trip, Kalamazoo, Mich., a 4 page price list of Italian bees and queens.

Oscar F. Bledsoe, Grenada, Miss., a 5-page price list; Italian queens a specialty.

Geo. W. Baker, Milton, Ind., an advertising sheet of bees, queens, and bronze turkeys.

Oliver Foster, Mt. Vernon, Iowa, an 8-page circular of queens, and bees by the pound.

A 14-page catalogue for J. M. Jenkins (mentioned on page 75). Specialties, bee-hives and implements. This catalogue contains a large amount of instructive matter, besides the prices it gives.

Hutchinson & Taylor, Rogersville, Mich., a 4-page price list of bees, queens, hives, sections, etc. As Mr. Hutchinson has adopted the new Heddon hive, he will now offer his old ones for sale.

TOBACCO COLUMN.

THE SMOKER AS A MEMENTO.

WHILE I was perusing the letters in the Tobacco Column, I was at once reminded of the fact that, three years ago last August, I, too, upon the impulse of the moment, quit the use of tobacco (for I had become an inveterate user of the vile weed, both chewing and smoking), and I also have a vivid recollection of informing you of the fact of my quitting the use of tobacco, and soon after I received a smoker from you, which I preserve with the utmost care as a memento from one who is doing in a manly and praiseworthy way what he can to reclaim his fellow-man from a habit which is not only nauseating, but perfectly useless and disgusting. I, too, have plead with many, and have so far persuaded some to quit the awful habit, that they would throw their old pipe and what tobacco they had into the stove, or elsewhere, and declare they would use the vile weed no more. How many have kept good their promise, I can not say. But for one I can say that, since I resolved to quit it, I have never touched, tasted, nor handled it, and with the help of God I never will again.

F. W. THOMPSON.

Quincy, Ill., Oct. 20, 1885.

HAS USED TOBACCO 20 YEARS, AND ONLY 26 YEARS OLD.

After using tobacco twenty years I have quit, and never expect to use it again, although I am only 26 years old. If you think I deserve a smoker, please send me one; and if I take up the habit again I will pay for the same.

G. B. ALLEN.

Rocky Hill Sta., Edmonson Co., Ky.

A "THOUSAND TIMES OBLIGED" FOR SO NICE A SMOKER.

I am a thousand times obliged to you for the smoker you sent me. It is more than I expected. Really, I did not look for a smoker at all. I did not know but it was like all the humbugs we read about. There are not many men who would give away an article that costs as much as that did, for the small sum of nothing.

L. F. COUSINS.

Utica, Pa.

COMMENCED THE USE OF TOBACCO, BUT PAYS UP LIKE A MAN.

Inclosed you will find the cash for the smoker and tobacco contract which is due you. You sent me the smoker in good faith, and I commenced the use of tobacco again. I will pay up like a man.

Centreville, Ind., Jan. 1, 1886 B. C. NEFF.

GONE BACK TO TOBACCO, BUT PAYS FOR THE SMOKER.

As I have commenced the use of tobacco again, please find inclosed one dollar to pay for smoker you sent. I quit long enough to save more than the price of a smoker.

Here is my report for last season: 26 swarms in the spring; increased to 50 good swarms, got 198 lbs. of comb honey, and 1170 lbs. extracted, or an average of 52½ lbs., spring count.

EDWIN HUBBARD.

Oil City, Monroe Co., Wis.

A HARD STRUGGLE.

I have given up the use of tobacco. It was a hard struggle, but I have gained the victory. I think I am not as nervous as I was; and by the help of God, I hope I may never use it again. It is awful

when a man puts himself down to be such a slave to such a filthy weed.

C. M. HICKS.

Fairview, Md., Nov. 10, 1885.

KIND WORDS FROM OUR CUSTOMERS.

GLEANINGS is a welcome visitor. I would not do without it for thrice its cost.

E. E. BENDER.

Aspen, Adams Co., Pa., Feb. 8, 1886.

YET TO FIND FAULT.

I have yet the first time to find fault with a single article I have purchased from you. All proved perfectly satisfactory.

FRANK MURRILL.

Bonseeks, Va., Dec. 26, 1885.

THE ABC CHEAP AT DOUBLE THE PRICE.

The A B C book came safely to hand yesterday, and I must say that I was surprised to see so large a volume for only \$1.25. I consider it cheap at \$2.50.

Phariburg, Va.

T. T. PHLEGAN.

GLEANINGS FULL OF NEW IDEAS.

I have taken GLEANINGS for the past two years. My time expired Dec. 15. I did think I would drop it for this year; but as there are so many new inventions and ideas coming up, I guess it will be for my interest to have it continued.

Fair Haven, Rutland Co., Vt. E. L. WESTCOTT.

OUR MODE OF PACKING.

The trunk and contents arrived to-day, with every thing safe and sound. I much admire the neat and safe packing of the goods. I think you must have an experienced hand at the packing business, as I never have had goods packed so neatly and securely. Accept thanks for your promptness.

Bowman, Ga., Feb. 1, 1886.

J. D. BROWN.

THE QUEEN A LIVELY ONE.

The queen you sent last June came all right. She was a lively little thing; for when I let her loose on the comb she ran clear to the bottom of the hive before she slackened her motion. She changed the whole colony in about two months, from blacks to yellow-banded workers. Thank you for your promptness.

A. J. SHEPARD.

Walker, Linn Co., Iowa, Jan. 22, 1886.

A FEW MORE OF OUR 20-CENT SHEARS.

I want a few more pair of those 20-cent shears, to finish supplying my neighbors. I have already had eight pair. Nearly every one who sees them wants a pair. I have made out an order for the shears and a few other articles from your counter.

ADELBERT COOK.

Norwich, Chenango Co., N. Y., Feb. 8, 1886.

THE PARKER FOUNDATION-FASTENER.

I read the essay you gave at the Detroit convention, with much interest and entire approval, but could hardly see how you overlooked a cheap foundation-fastener. Last year I bought of James Heddon a Parker foundation-fastener at 25 cts., which I understood came from your shop, and I could better afford to buy one every week during the busy season than to do without one.

O. B. BARROWS.

Marshalltown, Ia.

SOME KIND WORDS FROM ONE WHO IS NOT A BEE-KEEPER.

I am a stranger to you; but Mr. Woolley is a member of our family, and takes GLEANINGS. I read Our Homes and Myself and My Neighbors, and write to thank you for them. We live in the big woods, and have very little preaching, so it is doubly welcome. I am an English woman, and send kind regards to you and wife and family. Please accept best wishes, both temporal and spiritual.

MRS. S. A. SHALE.

Kingston, Minnesota, Dec. 4, 1885.

[May God bless you, my good friend, for your kind and encouraging words. My dear wife is one of old England's daughters, and I am sure she will be glad to know that my efforts have been helpful to those who are deprived of the regular preaching of the gospel. May the Lord be with you and all your friends in your far-away home.]

THE STORY OF THE BIBLE.

Will you please send to my address a copy of "The Story of the Bible"? I sent for one a year ago, and my little niece has taken such a fancy to it that I wish to make her a present of one.

Milan, Ill., Dec. 14, 1885. EMILY JENKINS.

OUR JOB WORK GOOD.

The circulars received—an exceedingly neat, a perfect job. Let me thank you, especially for the reduction in price, the printed matter being less than you at first thought there would be, and at first quoted for. You could have made the additional \$4.00 out of me without my ever knowing any better. If you act in that way as a rule, you are certainly an honest man. OSCAR F. BLEDSOE.

Grenada, Miss., Feb. 15, 1886.

WHAT THE EDITOR OF THE POULTRY AND FARM JOURNAL THINKS OF GLEANINGS.

Your Jan. GLEANINGS is at hand. I gladly put you on the exchange list, and forward Jan. Journal to-day. I am greatly pleased with Ira D. Granger's words on 31st page; and with a journal whose impress is out-and-out for Christ, everywhere. Please accept my earnest congratulations to an editor who mixes religion into all his business. It is a good *bœuf* to use. T. T. BACHELIER.

Minneapolis, Minn., Jan. 29, 1886.

IT PAYS TO ADVERTISE IN GLEANINGS.

I find it pays to advertise in your *fresh and vigorous* GLEANINGS. My other "ad" in GLEANINGS cost me the trifle of sixty cents, and yet it brought me more clean profit than the best-paying postoffice in our town brings per year. It is a law of reason, that *the man who won't advertise his goods deserves to fail*. I had almost forgotten to say that the issue containing my "ad" was hardly out of the press before I began to have proposals. I believe your patrons are all live men, all in the front rank too.

Rockport, O., Feb. 6, 1886. G. A. FARRAND.

A KIND WORD FROM FRIEND VIALLON, AND SOMETHING BESIDES.

I will ship one of my four-frame nuclei, between the 5th and 15th of April, 1886, to the bee-keeper who will have sent you the largest number of subscribers from January, 1886, to the first of April, 1886. Whoever he may be, he will not be sorry of the extra trouble taken to solicit subscribers for GLEANINGS.

P. L. VIALLON.
Bayou Gonla, La., Feb. 9, 1886.

[Many thanks to you, friend V. Now, will those who apply for this premium name it when they send in clubs? Or if you have sent in any clubs already since Jan. 1, call our attention to the fact, that we may verify and put you on the list.]

GO ON IN THE GOOD WORK.

I inclose you one dollar for my next year's subscription. Go on in your good work, and God will bless you. You and I differ in some things; but you are honest, and honest men go to heaven. The one who has had the most advantages will have the most to answer for. If I have health and opportunity I will come to see you next year. I think a good talk with you would do me good. I have had many troubles and much tribulation, but have been blessed with a hopeful and courageous spirit, and a mind too active for a weak frame. I should esteem a man like you as a friend and neighbor, as a priceless boon. Pardon me for this. GEO. E. HILES.
Houston, Texas, Dec. 3, 1885.

GLEANINGS A "CASKET OF SUCH GOOD THINGS."

The wrapper on my last copy of GLEANINGS informs me that my time expires with present number; and as I can not afford to lose a single issue, I hasten to inclose one dollar for another year's subscription. I must say, that GLEANINGS is a most welcome visitor that never fails to come twice a month, with a casket of such good things that it is who will and who shall, among my wife, daughter, son, or myself, be the first to peruse its pages. May God bless and spare its noble-hearted editor for many long years to come, to send it forth as bread east upon the waters, that may be gathered many days hence.

J. D. BROWN.

Bowman, Elbert Co., Ga., Dec. 25, 1885.

THE TIN TUNNEL FOR PUTTING UP BEES.

The goods I ordered of you were all received yesterday—nothing missing. You ought to see me in May, shaking bees through that tin tunnel, into cages to ship. I would not take \$1.50 for my Morton's gold pen. I don't see how you can sell them so cheap. The gloves are large enough this time. I am all right for snow, or bees either.

W. A. SANDERS.

Oak Bower, Hart Co., Ga., Feb. 11, 1886.

OUR 35-CENT WHOPPER KNIFE.

I am proud to inform you that, after dealing with you for several years, more or less, I can heartily congratulate you on your honesty, integrity, and promptitude as a dealer in mercantile goods, and as a Christian gentleman. The last goods I ordered of you came to hand, giving the usual satisfaction. I make special mention of your knife, known as the "Whopper." It is just the knife for service, large and strong, well united, cheap; and as to metal, it is not to be surpassed by any knife. Since the first one came to us, several have been ordered: and all who get them are well pleased. Your steel shears have given the same satisfaction to all who got them. In fact, your way of dealing meets the expectation of all honest people.

NAT. T. DRAUGHON.

Clarksville, Texas, Dec. 10, 1885.

GOODS RECEIVED IN GOOD SHAPE.

The goods arrived in good shape, and give full satisfaction. Thanks. The A B C book is excellent, and I would not be without GLEANINGS, even if its price were \$3.00 per annum. Last spring I caught the bee-fever, and it has been increasing ever since. I bought one colony of Italian bees. That single colony has given 210 lbs. of extracted honey, and has 4 daughters by artificial swarming. I tried to run the first swarm for comb honey, but had no success; they would not work in the sections, so I sent to you for an extractor. I got it, and it worked to a charm. I have adopted the improved Langstroth Simplicity hive. It is cheap, well made, and in regard to convenience it stands ahead of all sorts of hives I have seen. I winter my five colonies on their stands in good packing-cases, protected on the north and west sides by an eight foot-high board fence. They are all right so far.

T. H. DAHL.

Stoughton, Wis., Jan. 5, 1886.

A KIND WORD FOR THE WAY IN WHICH WE BIND BACK NUMBERS OF GLEANINGS.

I have just received the bound volume of GLEANINGS for 1885, in exchange for my old ones; and to say I am satisfied with the exchange hardly expresses it. I have been binding them myself heretofore, but will do so no more as long as I can get new ones so nicely bound for so low a price. I don't see how you can afford it; but if you can stand it, I think we ought to. Of course, every bee-keeper who is well posted, or wants to be, keeps his back numbers. There is great comfort and convenience in having them neatly bound; and when you can get a nice new volume for less than it ordinarily costs to get the old ones bound, every bee-keeper ought to have one of them. Where they can be sent by freight with other goods, the expense is insignificant.

J. A. GREEN.
Dayton, III., Feb. 9, 1886.

HOW \$1.00 INVESTED IN GLEANINGS SAVED \$5.00.

The editor's notice runs thus: "If I am correct, your subscription expires with the present number," and then the question arises, "Have you found GLEANINGS a good investment?" Now, kind reader, I commenced bee-keeping in 1885 with three swarms, purchased the fall previous, and increased to eleven by natural swarming. My first swarm was two at once, and clustered in one place. With the assistance of GLEANINGS I caught one queen before the bees balled her, and then divided the bees and put them into separate hives, and they went to work, blacks and Italians, in both hives, all mixed up, and to-day I have them in the cellar, doing well. I think I saved five dollars, so I am under the impression that I did not make a bad investment. Some people count every thing by dollars and cents; but GLEANINGS has some things in it that I can not count on in that style, for which I highly prize it and subscribe for it once more.

Elora, Ont., Can.

G. STRANGWAYS.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,
EDITOR AND PUBLISHER,
MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, MAR. 1, 1886.

Fear not, little flock; for it is your Father's good pleasure to give you the kingdom --LUKE 12: 32.

BARNES' LATEST IMPROVED POWER BUZZ SAW.

WILL those who have purchased these machines, please tell us how they work? If possible, how they work compared with the old style?

GREGORY'S LITTLE BOOK ON FERTILIZERS.

AFTER a hasty review of the sample copy sent us, we think the work is one that will prove of very much value to every one engaged in raising plants. See advertisement in this issue.

DISCOUNTS FOR THE MONTH OF MARCH.

THESE are the same as those given for February; namely, 10 per cent off on foundation, and 5 per cent off on sections; but only 2 per cent, instead of 3, additional, on orders received during the month.

MATTER FOR GLEANINGS.

AGAIN we find it impossible to find room for great numbers of good articles. Under such circumstances, we are compelled to use the best of our judgment in deciding what shall or shall not fill the pages.

SENDING US BEE-HIVES TO EXAMINE.

DON'T send me any more bee-hives without first writing me about them. We have not room to store them until we can write you, and I have not time to look them over, to pass an opinion on them. Besides, I do not believe we want any more hives than we have already. There are too many now. If you have something that is away ahead of any thing heretofore discovered, give me a rude sketch of it on a piece of paper. After looking at this, if I want to see the hive I will tell you.

ANOTHER-BEE-JOURNAL.

A VERY pretty-looking journal on bees and poultry, called *Rays of Light*, is at hand. The name, certainly, is different enough from any other now in the field to prevent confusion on that score, and I don't suppose we shall ever have too many "rays of light" while the world stands. We have been a little backward lately about mentioning new journals, because so many start up, run a little while, and stop without even so much as making good their unexpired subscriptions. I have been wondering if it wouldn't be a good plan for new bee-journals to give some reference in regard to their standing, and financial ability to keep the thing going for a whole year at least. *Rays of Light* comes from J. J. Martin & Co., North Manchester, Ind., who is quoted by Bradstreet as having means and ability to publish at least a 50-cent magazine.

MUTH'S COLD-BLAST SMOKERS.

Our old friend Muth has started something new in the way of a smoker having a bellows made of tin, so the smoker is all tin except the leather. This all-metal cold-blast smoker is much like ours in appearance, except the material of which the bellows is made. Price 50 ets., or five for \$2.00. By mail, 25 ets. extra. An improvement on this, which he calls the "Perfection," has a valve in the bent airtube, to prevent the smoke from being drawn back into the bellows. Price of the Perfection, 75 ets.; five for \$3.00; either of the above, 25 ets. extra when sent by mail. The third is a muzzle feeder, something on the style of Bingham's. The fire-pot, also, has an extra covering of tin, to prevent burning the fingers. Price of muzzle feeder, \$1.25, or five for \$5.00. By mail, 35 ets. each extra. We can furnish them at the above figures.

NICE HONEY FOR ONLY 7 CTS. PER LB.

ONE of the bee-friends has just sent us a beautiful lot of honey in sap-pails, and he wants the pails right back for sugar-making. A good part of the honey is clover, but it is flavored more or less with basswood, and it is *beautiful thick honey*. To close it out at once, he offered it at such a low price that I can send you a 58-lb. iron-jacket can full at only 7 1/2 ets. per lb., or an even \$4.25 for the whole package (the iron-jacket can being worth 58 ets.). If you will take two cans full, you may have it for only 7 ets. per lb., or an even \$8.00 for the whole 116 lbs., *cans included*. Of course, this offer is for immediate orders. Sample free on application.

P. S.—We have just secured two barrels of raspberry honey, which we will sell at the same price as the above; or if you will take a whole barrel of 46 gallons, we will make it 6 1/2 ets. No charge for the barrel. Sample of the latter, also, free on application.

A CRATE TO HOLD SECTIONS ESPECIALLY FOR THE CHAFF HIVE.

WE are now making a crate of this description on the J. E. Moore plan. It holds 32 regular Simplicity sections, or 36 7-to-the-foot sections. Of course, this style of crate does not admit of the use of separators. The price of the crates, made up, is 20 ets. Two of them fill the upper story of a chaff hive nicely, taking 64 ordinary sections, or 72 7-to-the-foot sections. Now, although this arrangement takes nearly the same number of sections as the wide frames, the expense of the arrangement is considerably less. As to whether we would advise this in preference to the arrangement of wide frames, we can not answer. The J. E. Moore case has been received with considerable favor, and doubtless many will prefer the arrangement. One good thing in their favor is, that you can get at the lower story so much easier, having only two cases to remove instead of ten wide frames. We can furnish the above in the flat at the same price as the regular S. size; viz., 1, 16; 10, \$1.35; 130, \$12.00.

BASSWOOD-TREES, DIFFERENT SPECIES.

IN Ellwanger & Barry's illustrated catalogue of ornamental trees for 1886, you will find mentioned 14 different varieties of basswood, or linden. I was at first tempted to order a tree of each kind, to test them for honey; but a good many of them cost a dollar apiece, so it would be a somewhat expensive experiment. The distinguishing features, as I understand it, are the shape and size of the leaf,

and the color of the buds and young branches. In planting our basswood orchard, some twelve years ago, I noticed we found little trees in the forest, some of which were red and others yellow; so it seems to be an accidental and common feature; and if the trees are in no way different, except the color of the bark, which is quite probable, it will not be worth our while to make the experiment. The white-leaved weeping linden, or the ent and fern lindens, are ornamental trees for the lawn or dooryard. The same catalogue gives two different kinds of tulip, or whitewood trees; namely, the common and variegated leaved. Now is the time to order basswoods, if you are intending to put them out this spring. See prices in our new price list.

REDUCTION IN THE PRICE OF SAP-PAILS.

As the sugar-making season is approaching, sap pails and spiles will be needed soon. We are pleased to tell you that the price of these has declined. We can furnish sap-pails, made of IC charcoal tin, 10 qt., for \$14.00 per 100; 12 qt., \$15.00. IX charcoal, 10 qt., \$16.00; 12 qt., \$17.50 per 100. Sap-spiles, best retinned, at 10 cts. per doz.; 75 cts. per 100, or \$7.00 per 1000. The spiles can be sent by mail for 6 cts. per doz., or 45 cts. per 100, extra. Wooden sap-pails, \$12.00 per 100. These are put up in packages of one dozen each; and in every dozen there are two pails with bails. The rest have no bails.

Three-eighths-inch bits for tapping trees, 15 cents each; postage, 3 cts. extra. Brace for same, with set-screw, 20 cts.; 18 cts. extra for postage, if sent by mail. Brace with patent grip, 50 and 75 cts., according to size. Gallon syrup-cans, guaranteed not to leak, \$1.20 for 10, or \$11.00 per 100. Oblong tin cans, for making maple-sugar bricks, \$2.75 per 100.

Please note that the law now requires that the name of the person who puts up maple syrup must be put on the package in letters not less than one inch high, and three-eighths of an inch wide. We are prepared to print labels in accordance with the above law; and where desired we can paste them on your cans, so you have nothing to do but to fill them with syrup.

REDUCTION IN THE PRICE OF BEE-SUPPLIES, ETC.

MARCH 1, 1886, your humble servant, A. I. Root, is enjoying himself with the "New Agriculture." You see, we take the exhaust steam, after it has warmed our buildings, and put it down through those stone reservoirs I told you about on page 58, and it has made the ground warm enough so we are setting out all kinds of hardy plants, and making them grow as in June. When there comes a zero freeze, we have to put a sash over them. Sash is a great deal better than any kind of cloth covering, especially for a hard freeze. Ernest and John, with the help of a great lot of other of your friends, are taking care of the journal and the price list. Perhaps that accounts for the large department of Kind Words that appears in this number. They thought they were all right, and so I let them go. And, by the way, Ernest and John and these other friends have been figuring on the cost of a great many of these things we make for you, and have declared so positively that the goods can be sold cheaper, that I have consented to a big reduction in the price of many things in our price list. The reduction is so great, in fact, that we have decided to mail a new price list to every one of our subscribers. This will be done just as soon as this journal

goes to press. In fact, we have got it out a little ahead of time with that very end in view.

We have received, during the month of February, 401 new subscribers; but during this time 358 have expired and have not renewed, so we are only 43 ahead, making 5024.

A NEW EDITION OF THE A B C BOOK.

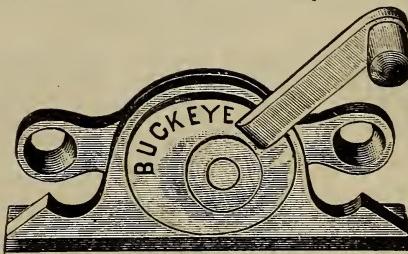
This is now out of the press, making the 27th thousand. It contains mention of almost every thing of importance up to the present date, even including a notice of Heddon's new hive, as well as cuts and descriptions of his hive of a year ago. As we said before, if you already have an A B C book, and sell it to somebody for half price, we will sell you a new one for the money you get; that is, the new edition will be half price to those who have recently purchased the edition before it.

BUCKEYE SASH-LOCK

A Device to Fasten Windows up or Down, or at Any Point.

Something Effective, although Low in Price.

For many years I have been trying to get something better to hold a window up than a stick or a book, or something of that sort; but although we have tried them, even paying as high as 75 cents per window, I have never had any thing please me so well as the little device illustrated below.



This device holds the sash securely by friction in any desired position, as tight as if it were in a vise. It prevents the sash from rattling, and excludes the dust by making tight joints, and yet it does not mar the wood. It is put on with two screws, and can be fitted by an inexperienced hand in three minutes. It works equally well in upper or lower sash, with or without weights. Printed instructions are furnished with each one, as well as screws to fasten them on with, and yet the price is only 5 cts.; 10 for 48 cts.; 100 for \$4.00. If wanted by mail, add 3 cts. each extra. The little device is the invention of one of our Medina Co. boys.

A. I. ROOT, Medina, O.

15 PLYMOUTH-ROCK EGGS by express for \$1.00.
579d S. A. DYKE, Pomeroy, Ohio.

S TRAWBERRY PLANTS, \$1.00 per 100, by exp. 1 doz., 20c; Pure Crescents, Downings, and Kentuckies, 1 doz., 20c; Russian Mulberry-trees, 5c; three for 10c. Bokhara clover, and mustard seed, 5c per oz. Free by mail.

A. FIDDES,

Centralia, Marion Co., Illinois.

S PIDER-PLANT Seeds at \$1.50 per lb.; $\frac{1}{4}$ lb., 40c. 5d cts.; 15 cts. per oz. by mail. W. A. SANDERS,
Oak Bower, Hart Co., Ga.

FOR SALE. At Grand Bay, Ala., on L. & N. R. R., 25 colonies of hybrid and Italian bees, in two-story Simp. and Viallon hives—the lot together at \$5.00 each, as they stand. House and two acres of land also for sale. 5fdb J. J. DAVIDSON, 268 Magazine St., New Orleans, La.

**THE
Apicultural Establishment
OF
F. J. DOKOUPIL,**

In Vigaun, Upper Carniola,
Austria, Europe,

Send QUEENS postpaid. Safe arrival and purity of
breed guaranteed.

Price each in German Reichsmark.										
	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.			
Carniolan Queens, Native,	8	7	6	5	4	4	4			
Native,	9	9	8	7	6	6	6			
Cyprian or Syrian Queens,	20	20	20	20	18	18	18			
Native,	12	12	11	11	10	10	10			
Cyprian or Syrian Queens, bred in Carniola,	579d									

THE CANADIAN BEE JOURNAL.

WEEKLY, \$1.00 PER YEAR.

JONES, MCPHERSON & CO., Publishers, Beeton, Ontario, Canada.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice toned paper, and in a nice shape for binding, making in one year a volume of 82 pages.

9tbd

SECTIONS.

Western headquarters for bee-men's supplies. Four-piece sections, and hives of every kind, a specialty. Flory's corner-clamps, etc. Orders for sections and clamps filled in a few hours' notice. Send for sample and prices.

M. R. MADARY,
22 21db Box 172. Fresno City, Cal.

75 COLONIES OF BEES FOR SALE.
Address J. S. BAXTER.
itfdb Corinth, Alcorn Co., Miss.

FOR SALE. Cigar-box planer, Root saw-table, 10 saws, grooving-table, 2 sets of saws, shafting and pulleys, all good as new, used two years; give us an offer; must be sold. Also 6 colonies of my improved Italian bees, in two-story chaff hive, at \$8.00 per colony. A Given fdn. press and wiring-machine, for \$25.00. A lot of 2-story chaff-hives, tin roof, with 2 crates, \$2.50 each; former price, \$5.00; 100 smokers, Clark's, at 25 cts. each; \$2.00 per 100; 1000 Simplicity wired frames at \$1.00 per 10); 10.0 in flat, at 75 cts per 10).

4tfd GEO. F. WILLIAMS, NEW PHILADELPHIA, O.

PLYMOUTH ROCKS a specialty. No other fowls kept for 6 years. Eggs, \$1.50 per lb.; \$2.50 for 26.

4.5d S. S. JORDAN, Hiramburg, Ohio.

**SUMNER & PRIME,
BRISTOL, * VERMCNT.**

—MANUFACTURERS OF—

Bee - Keepers' Supplies.

White Poplar Dovetailed Sections and Shipping Crates a Specialty. Price List and samples free.

1-2tfd

Bee-Hives, Honey-Boxes, Sections.

LARGEST BEE-HIVE FACTORY IN THE WORLD.

CAPACITY, 1 CARLOAD OF GOODS PER DAY

Best of goods at lowest prices. Write for Price List.

Itfdb.

G. B. LEWIS & CO.,

Watertown, Wis.

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; F. L. Dougherty, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Illinois; Arthur Todd, Germantown, Philadelphia, Pa.; E. Kretschmer, Coburg, Iowa; Elbert F. Smith, Smyrna, N. Y.; D. A. Fuller, Cherry Valley, Ill.; Clark Johnson & Son, Covington, Kentucky; J. B. Mason & Sons, Mechanic Falls, Maine; C. A. Graves, Birmingham, O.; M. J. Dickason, Hiawatha, Kan.; J. W. Porter, Charlotteville, Albemarle Co., Va.; E. R. Newemo, Pleasant Valley, Dutchess Co., N. Y.; J. A. Humana, Vienna, O.; G. L. Tinker, New Philadelphia, O.; J. M. Shuck, Des Moines, Ia., and numerous other dealers.

Write for samples free, and price list of supplies, accompanied with 150 Complimentary and unsolicited testimonials, from as many bee-keepers, in 1883. We guarantee every inch of our foundation equal to sample in every respect.

CHAS. DADANT & SON,
3btfd Hamilton, Hancock Co., Illinois.

FOR SALE.

One second-hand fdn. mill that will roll sheets 14 inches wide. The mill is at present in New Hamburg, Ont., Can. The original price on it was \$40.00, but we will now sell it at half price, or \$20.00.

Also one exactly like it, owned by W. W. Bliss, of Duarte, Los Angeles Co., Cal. There is nothing wrong with these mills, except that the rolls are of smaller diameter than those we now make, in consequence of which they do not make quite so thin fdn. right in the middle of the rolls as those made now with rolls of a larger diameter. They will, however, roll narrow sheets equal to any, and will roll sheets a foot wide; but when of so great a width, the center is a trifle thicker, as explained above.

Also one 9-inch Dunham mill, second hand. The mill has, however, been completely fitted up, painted, and varnished, and is, to all appearances, both in looks and quality of work, equal to a new one. Price \$20.00. The list price of a new mill of this kind is \$49.00.

A. I. ROOT, Medina, O.



Orders filled the day they are received, except for bees and queens.

4tfd

GREAT REDUCTION IN PRICES.

Our beautiful all-in-one-piece sections, smooth inside and out, at \$4.00 per 100. For larger lots, write for prices. Send for price list of other supplies.

M. H. HUNT.

2tfd BELL BRANCH, WAYNE CO., MICH.

FOUNDATION. SECTIONS,
WARRANTED FIRST CLASS. OF FINE QUALITY.

Samples and reduced price list of supplies, free.

J. D. GOODRICH,

3-5-7-9-11-19d. EAST HARDWICK, CAL. CO., VT.

FOR SALE. 20 COLONIES ITALIAN BEES, on 7 Langstroth frames, in shipping-boxes, \$4.50, or shipped in Parker chaff hive, \$6.50 per colony.

WM. AMELANG,
Ottumwa, Wapello Co., Iowa.

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rate. All ad's intended for this department must not exceed 5 lines, and you must say you want your ad. in this department, or we will not be responsible for any error.

WANTED.—To exchange nice new apple-seeds for beeswax. M. ISABELL. 4-5d. Norwich, Chenango Co., N. Y.

WANTED.—To exchange a home-made foot-power saw for bees. Write for particulars. 5tfd. W. S. WRIGHT, Battle Creek, Mich.

WANTED.—To exchange Italian bees, queens and nuclei, for an extractor, supplies in the flat, and comb fdn. 4-5d. MISS A. M. TAYLOR, Mulberry Grove, Bond Co., Ill.

WANTED.—To exchange bees or eggs from Light Brahmans (Tees' Strain), for wire netting. 4tfd. W. E. FLOWER, Ashbourne, Mont. Co., Pa.

WANTED.—To exchange new Novice honey-extractors for A. and L. frames; will exchange for a bone-grinder, or good books, or any thing useful. GEO. W. BAKER, Milton, Ind. 3-5-7-9-11-13d

WANTED.—To exchange for bees, or pure-bred poultry, 10,000 Mammoth-Cluster and Turner Raspberry-plants, \$1.00 per 100, \$6.00 per 1000; also 20,000 Strawberry-plants, Crescent Seedling, Cumberland Triumph, Sharpless, and Glendale; 75 cts. per 100; \$4.00 per 1000. 5d. W. J. HESSE, Plattsburgh, N. Y.

WANTED.—To sell or exchange new Heddon hives, reversible frames, 17 $\frac{1}{2}$ x 9 $\frac{1}{2}$; also Plymouth Rocks, for extracted honey, Michigan quart berry-boxes, Jewell strawberries, Nemeha, Golden queen, and Shaffer raspberry plants, and pruning-shears. 4-5 E. J. SCOFIELD, Hanover, Rock Co., Wis.

WANTED.—To exchange or sell. Friends, I have 15 pairs of the celebrated Bonney's stock of Brown Leghorns that I will sell at \$3.00 per pair, or will exchange for good beeswax at 25 cts. per pound. Circulars free. Ref., A. I. Root. 24tfd. A. H. DUFF, Creighton, Guern. Co., O.

WANTED.—To exchange strawberry and raspberry plants for \$1.00 or tested queens, or pounds of bees (in spring). Address 2tfd. C. W. PHELPS & Co., Tioga Centre, Tioga Co., N. Y.

WANTED.—To exchange Italian bees or queens for ferrets, Wyandotte pullets, or eggs for hatching; also one or two pair of fancy pigeons. Stock must be first-class. 5d. JAMES P. STERRITT, Gallupville, Schoharie Co., N. Y.

WANTED.—To exchange, telegraph instruments, keys, relays, and sounders, for bees. 5d. E. F. WILCOX, La Grange, Lorain Co., O.

WANTED.—To exchange bees for a Barnes saw, foundation-mill, or Light Brahma fowls; or I will sell bees by the pound; also queens in season. 5-6-7-8d. JAMES P. STERRITT, Sheakleyville, Mercer Co., Pa.

WANTED.—To exchange Simplicity hives for a circular-saw mandrel for hive-making by steam power. Will sell hives (in the flat) cheap for cash, or will take one-third pay in full colonies of bees. Hives in any quantity to suit customers, up to a carload per day. G. A. FARRAND. 3tfd. Rockport, Cuyahoga Co., O.

WANTED.—To exchange for a farm, or sell my place, consisting of 7 $\frac{1}{2}$ acres of ground in the town of Lewisville, Ind. A small dwelling, poultry-houses, stable, and an everlasting gravel-bank, which affords about 3000 loads of gravel every year, which sells readily at from 10 to 15 cts. per load. The place is in good honey locality, and good shipping facilities. Apiary slopes to the south and east; is surrounded on the north and west by a tight plank fence, about 7 ft. high. Apiary is set in grapevines. I will give five years' time, if sold. Direct all communications to 3-5-7d. GEO. W. BAKER, Milton, Ind.

WANTED.—To exchange Brown Leghorn eggs for hatching, S. C., for foundation, also for sale; \$1.00 for 13; 30 eggs for \$2.00; 75 eggs, \$4.00. 5d. R. J. NASH, Williamson, Wayne Co., N. Y.

WANTED.—To exchange foundation for wax. 5tfd. B. CHASE, Earlvile, Madison Co., N. Y.

WANTED.—To exchange large, good piano for bees; also pure-bred B. Leghorn and Partridge Cochin eggs, for bees by the pound. 5d. L. HARRIS, Box 334, Greenville, Ill.

WANTED.—To exchange berry-plants for 1 dozen warranted Italian queens from the South. Will also take supplies. See our small-fruit and poultry circular, free. 5d. S. P. YODER, E. Lewistown, Mah. Co., Ohio.

WANTED.—To exchange, Aparian supplies for Italian bees. Circular free. 5d. L. J. TRIPP, Kalamazoo, Mich.

WANTED.—To exchange Italian bees or queens, or comb fdn., made on the Given press, for a second-hand engine, 1 or 2 horse-power. 5d. L. HEINE, Bellinore, Queens Co., N. Y.

WANTED.—To exchange, telegraph instruments, new, and silverhill buckwheat, for supplies, bees, or offers. 5d. C. D. MANVILLE, LaGrange, Ohio.

FOR SALE. Italian Bees, 10 Langstroth frames, \$7.00 per colony; 2 for \$13.00; 2 frame nucleus with queen, \$12.00. 5d. JANE E. HUNTINGTON, MILLBRO DEPOT, BATH CO., VA. (Formerly of Cotton Hill, W. Va.)

SUPPLIES VERY CHEAP!

**ITALIAN BEES, BEE-HIVES,
SECTIONS, FOUNDATION, EXTRACTORS,
SAW-MANDRELS, ETC.**

As I manufacture all kinds of supplies, I can sell very cheap. 5tfd. E. Y. PERKINS, Jefferson, Greene Co., Iowa.

CLOSING OUT!

Desiring to move about Apr. 1, I shall sell and deliver at depot, before that time, 32 colonies of Italian and hybrid bees in 2-story Simplicity hives, 20 L. frames, fat \$5.00 each. Also one Novice Honey-Extractor, L. frame, and knife, for \$5.00. One Barnes combined circular and scroll saw, with 2 saws, one emery wheel, counter shaft for power, and all the necessary guinges, for \$25.00. Cost \$50.00. As good as new. Orders must be in by March 20, or I will sell at auction. Safe arrival guaranteed. 5d. J. H. REED, Orleans, Orange Co., Ind.

**PURE + ITALIAN + QUEENS
BRED FROM AN IMPORTED MOTHER,**

Sent by mail; safe arrival guaranteed, from April until October. Tested Queens, \$1.50; Untested Queens, \$1.00; per dozen, \$8.00. Satisfaction guaranteed, or money refunded. 5-7-9-11-13d

Walter McWilliams, Griffin, Ga.

LOOK + HERE.

What you can get for \$3.00. A 3-frame nucleus on L. frames, containing two frames of brood, Italian queen, frames covered with bees; 75 Italian queens will be sent to fill first orders. Such nuclei as I send will not only grow into strong colonies, but will doubly pay all expenses with surplus honey. A great many customers have reported over \$8.00 from each nucleus. If you want full colonies, or bees in any form except by the pound, write me before ordering elsewhere. Orders will be filled from the 25th of May to June 15. 5tfd.

DAN WHITE, New London, Huron Co., O.

HALF A MILLION GARDENS
ARE ANNUALLY
SEEDS *Peter Henderson & Co.* **PLANTS**
SUPPLIED WITH

Our Seed Warehouses, the largest in New York, are fitted up with every appliance for the prompt and careful filling of orders.

Our Catalogue for 1886, of 140 pages, containing colored plates, descriptions and illustrations of the NEWEST, BEST and RAREST SEEDS and PLANTS, will be mailed on receipt of 6 cts. (in stamps) to cover postage.

PETER HENDERSON & CO. 35 & 37 Cortlandt St.,
NEW YORK.

FRUIT AND HONEY BEARING TREES and PLANTS.

For \$1.00 I will send by mail, postpaid, any one of the following:

- 100 Catalpa-speciosa Trees. As posts, they have stood 50 years, perfectly sound; good bee-tree.
- 100 Box-elder, nice shade-tree, and bees work on them early in the spring.
- 300 Golden-willow cuttings; make a beautiful tree; used for tying, etc.
- 25 Gregg Black-cap Raspberry, best variety.
- 50 Turner, a red raspberry, perfectly hardy, always bears, and equal to white clover for honey.
- 25 Snyder Blackberry, the king of berries. Never winter-kills, never fails to bear.

Send for Catalogue to RANTOUL NURSERY,
45-6 d. Rantoul, Ill.

AT KANSAS CITY, MO.,

I RAISE PURE ITALIAN BEES FOR SALE.

Untested queens, in May	\$1.50
" " June	1.25
" " after June	1.00
Tested queens, double the above prices.	
Full colonies, before July 1.....	12.00
" " after	10.00
Bees, per half pound, same prices as untested queens.	

For discounts on large orders, see my postal circular. I warrant my untested queens to be *purely mated*. If any of the friends who have dealt with me heretofore are not satisfied, I shall be glad to have a full statement of the matter from them, and will do the best that I can to render satisfaction.

31fd E. M. HAYHURST, P. O. Box 60.

SECTIONS CHEAPER THAN EVER. THE "BOSS" ONE-PIECE SECTION.



Patented June 28, 1881.

NOTICE.—Bee-keepers will find it to their interest to send for our price list, just issued, before ordering their sections for 1886. We have our machinery in first-class order, and can turn out more sections per hour than other manufacturers in the U. S.

31fd JAS. FORNCROOK & CO., Watertown, Wis.

W. Z. HUTCHINSON,

In order to more fully supply the wants of his customers, has entered into partnership with his neighbor, R. L. Taylor, and will offer for sale bees (full colonies, or by the pound), queens, Given fin., white poplar sections, hives, cases, feeders, empty combs, etc., etc. Also hens' eggs, for hatching, of three varieties. For circular and price list, address

W. Z. HUTCHINSON,
Rogersville, Genesee Co., Mich.

Price

Our Green-house Establishment at Jersey City is the most extensive in America. Annual Sales, 2½ Million Plants.

Our Catalogue for 1886, of 140 pages, containing colored plates, descriptions and illustrations of the NEWEST, BEST and RAREST SEEDS and PLANTS, will be mailed on receipt of 6 cts. (in stamps) to cover postage.

PETER HENDERSON & CO. 35 & 37 Cortlandt St.,
NEW YORK.

MAKE YOUR OWN FERTILIZERS.

Why not get the materials in the cheapest form; how to make up formulas for different crops; seven ways to make plant food or bones, ground and whole; all about fish for manure and where to get them, and wood ashes, &c., &c. A book of 120 pages, crowded with valuable information, all given in the plain, common sense way farmers can understand. By mail 40cts. Also books on Onion, Squash, Cabbage, and Carrot and Mangold raising, at 30 cents each, or the five for \$1.35 by mail. Two of these have been through 10 and 15 editions. *My large Seed Catalogue free to all who write for it.*

JAMES J. H. CREGORY,
MARBLEHEAD, MASS.

Oldest Bee Paper in America—Established in 1861.

AMERICAN BEE JOURNAL,

16 page Weekly—\$1.00 a year.

Sample Free. THOMAS G. NEWMAN & SON,
925 West Madison Street, Chicago, Ill.

The Weekly British Bee Journal.

The British Bee Journal is now mailed to our address in packages, semi-monthly. In order to dispose of them, we offer them at present at \$2.62 per year, postage paid, beginning January, 1886. Will guarantee safe arrival of every number.

A. J. ROOT, Medina, Ohio.

FOR SALE. 400 COLONIES OF BEES.

Will exchange for good horses and mules.

357 ANTHONY OPP,
Helena, Phillips Co., Ark.

ITALIAN QUEENS,	March	April	June
Untested queens, - - -	\$1.50	\$1.25	\$1.00
Tested queens, - - -	3.00	2.50	2.00
Two-frame nuclei, no queen, 4.00	3.00	2.50	2.00
3-6db Dozen rates on application.			

ANNA M. BROOKS, SORRENTO, ORANGE CO., FLORIDA.

GLEANINGS IN BEE CULTURE.

APIARIAN SUPPLIES

—MANUFACTURED BY—

W. T. FALCONER, - JAMESTOWN, N. Y.,

Are Unsurpassed for **QUALITY** and fine **WORKMANSHIP**. A Specialty made of all Styles of the **SIMPLICITY HIVE**, including the **VAN DEUSEN-NELLIS**. The "**FALCON CHAFF HIVE**" with Movable Upper Story Continues to Receive the Highest Recommendations as Regards its Superior Advantages for Wintering and Handling Bees at all Seasons.

—ALSO MANUFACTURER OF—

VANDERVORT FOUNDATION,
THIN FOR SECTIONS, AND HEAVY FOR BROOD.

Will pay highest price offered in Gleanings from month to month for Beeswax delivered at depot here.

Dealer in a Full Line of Bee-Keepers' Supplies.

PRICES SUBJECT TO SAME DISCOUNT AS OFFERED MONTHLY IN GLEANINGS.

Send for Illustrated Catalogue for 1886. Free.

17td

BEE SUPPLIES. --

(ESTABLISHED 1864.)

We furnish **EVERY THING** needed in the Apiary, of practical construction, and at the lowest price. Satisfaction guaranteed. Send your address on a postal card, and we will send you free our large Illustrated Catalogue.

E. KRETCHMER, OCBURG, MONTGOMERY CO., IOWA.

**BURPEE'S
SEEDS,**

Bulbs, Plants, Thoroughbred Stock and Fancy Poultry. It is the only complete catalog of the kind published, and describes RARE NOVELTIES in VEGETABLES and FLOWERS, of real value, which can not be obtained elsewhere. Send address on a postal to

W. ATLEE BURPEE & CO., PHILADELPHIA, PA.

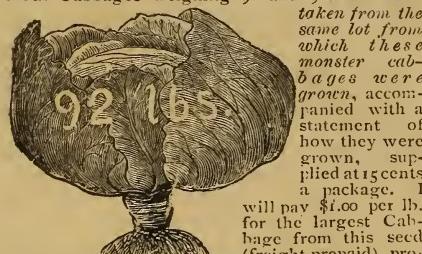
FARM ANNUAL FOR 1886

Will be sent **FREE** to all who write for it. It is a Handsome Book of 128 Pages, with hundreds of new illustrations, two Colored Plates, and tells all about the Best Garden, Farm and Flower

4561
4562

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